1967

QUEENSLAND

ANNUAL REPORT

OF THE

HEALTH AND MEDICAL SERVICES

OF THE

STATE OF QUEENSLAND

FOR THE

YEAR 1966-67

PRESENTED TO PARLIAMENT BY COMMAND

BRISBANE:
By Authority: S. G. REID, Government Printer

A. 40—1967

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ANNUAL REPORT OF THE DIRECTOR-GENERAL OF HEALTH AND MEDICAL SERVICES 1966-67

The Honourable the Minister for Health

SIR,—I have the honour to submit for your information the Annual Report of the Health and Medical Services Branch of the Department of Health for the year ended 30th June, 1967.

ABRAHAM FRYBERG,
M.B., B.S. (Melb.), D.P.H., D.T.M. (Syd.),
Director-General of Health and Medical Services.

INTRODUCTORY REMARKS

In this my last Annual Report I would like to express my thanks to those whom, because of their positions and my position, I have not been able to thank publicly during my twenty years in office.

I would first pay tribute to the help given to me by the late Honourable E. M. Hanlon (1932-1944) for it was he who gave me hope for the future after an accident which destroyed my hopes of specialising in paediatric medicine and surgery. It was he who suggested that I make public health my career and encouraged me to obtain the necessary qualifications to do this. When I finished my studies it was he who recommended my appointment as State Health Officer in 1936. I shall ever remember his kindness to me while the people of Queensland will remember him, amongst other things, for the establishment of maternity hospitals and maternal and child welfare services.

To the Honourable T. A. Foley (1944-1947), the Honourable A. Jones (1947-1950), and the Honourable W. M. Moore (1950-1957) I offer my thanks for their support. They had the difficult task of rehabilitating the Department following the war. They were Ministers at a time when expansion in all departments was limited due to the lack of personnel and shortage of building materials when priority was given to housing.

The late Honourable H. W. Noble (1957-1964), a practising doctor before becoming Minister for Health, appreciated that the application of preventive medicine in treatment of disease is necessary for good clinical medicine and gave every support in the application of this in departmental activities. He will be remembered by the people of Western Queensland as the Minister who gave them security in health through the establishment of the Flying Surgeon Service. He gave great support to the care of the aged and the Marjory Warren Geriatric Unit at the Princess Alexandra Hospital is a model for any such unit throughout the world. This has been followed by better care for all geriatric patients not only in the general hospitals but in the special hospitals.

I would like to thank you, Sir, for the encouragement and support you have given me since you have become Minister.

Your interest in the care of the mentally ill will result in the integration plan for mental illness being brought to finality this year. Many patients suffering from mental illness who were previously nursed in special hospitals are now being accommodated in general hospitals and, as a result, there is a growing realisation in the community that mental disease is just another disease to which no stigma can be attached.

Your support for a modern and progressive approach to the problems of the intellectually handicapped has been invaluable, and in particular has resulted in the establishment of the Industrial Therapy and Resocialisation Unit. In the near future, further planning will convert the Ipswich Special Hospital into a unit to be used only for the care of this type of dependent persons.

The final step in the integration plan is the use that is being made of community facilities, and the establishment of Griffiths House, Ipswich, made possible by the purchase of this building by the Government together with a contribution towards maintenance up to a maximum of $6,000 per annum, will enable patients discharged from hospital to adjust themselves to the hardships of the outside world.

A study of mental illness, particularly of children, and its relation to juvenile delinquency has resulted in the development of child psychiatry as a specialty within the specialty of psychiatry.

Child psychiatry has developed to a degree where it has become a separate Division of the Health and Medical Services. It too has been integrated into the General Hospital Services by the establishment of the Institute of Child Guidance which was opened by you last year. The Institute is staffed by professional officers of the Division of Welfare and Guidance but it is under the administration of the Royal Brisbane Hospital which supplies all other staff. It is in fact a ward of the Royal Brisbane Hospital.

Another type of illness is alcoholism. It too has been integrated into the General Hospital. The Wacol Rehabilitation Centre, which was opened by you in 1965, is under the administration of Mental Hygiene Services while the Alcoholism Clinic is a ward of the Royal Brisbane Hospital.

The implementation of the integration plan is the biggest advance made in the Department in recent years affecting as it does 36 per cent. of patients being cared for in our public and departmental hospitals.

STAFF

Dr. M. H. Gabriel, Health Officer, resumed duty on 14th November from a seven months' overseas study tour from an award of a World Health Organisation Fellowship.

Dr. B. J. Phillips, Senior Medical Director, Welfare and Guidance Clinics, returned to duty in December after a study tour overseas under a National Health and Medical Research Council Travelling Fellowship.

Dr. P. G. Livingstone, Director of Geriatrics, was granted leave from 6th March, 1967, to study for the Diploma of Public Health in Sydney. Dr. M. Cheong, Medical Officer, has been acting as Director during Dr. Livingstone's absence.

Dr. M. R. Connell took up duty as Medical Officer (Geriatrics) on 28th February, 1967.

Dr. J. F. McFarlane, Deputy Director, Maternal and Child Welfare, obtained special leave to study paediatrics. She was successful in obtaining Membership of the College of Physicians in Paediatrics (M.R.C.P.) of Edinburgh.

VITAL STATISTICS

The estimated population of Queensland at 31st December, 1966, was 1,674,796, an increase of 27,975 (or 1·7 per cent.). The estimated population living in the Brisbane Statistical Division was 786,350, an increase of 18,139 (or 2·3 per cent.) during 1966.

Queensland, next to Tasmania, is the most decentralised State in Australia. There is an increase in the proportion of population in the metropolitan area but it will be interesting to see if the development of industry in Central and Northern Queensland will halt this in the future.

The percentage proportion of State population in capital cities of the Commonwealth is shown in the following table:—

State	Percentage Proportion of State Population in Capital Cities Statistical Divisions
New South Wales	60·02
Victoria	69·26
Queensland	46·83
South Australia	70·66
Western Australia	66·82
Tasmania	38·03

The crude birth rate for Queensland decreased from 20·6 to 19·8 per thousand population in the past year and the number of babies born decreased from 33,551 to 32,843. This rate is higher than the Australian average of 19·3. It will be seen from Table VIII this downward trend is world-wide.

The marriage rate was 8·0 per thousand mean population, an increase of 0·1. Despite this there was a decrease in the number of births by 708. This crude birth rate is related to per thosuand population, not per thousand women of child-bearing age. In comparing the present rate with that of other years, some adjustment should be made for the increasing number of old people and young children in the population. Table I shows a comparison of the birth rate related to women of child-bearing age (18-39 years). If the crude birth rate in 1954 is taken as 100, in 1966 it was 84. If, however, it is related to women between the ages of 18 and 39, it is 90. The rate is below that of 1954 after making allowance for increase of women in the 18-39 years age group from 201,638 to 234,850. The contraceptive pill has been used widely since 1961.

TABLE I

Year	*Index of Crude Birth Rates	*Index of Births to Number of Women aged 18–39 inclusive
1954	100	100
1955	102	103
1956	99	102
1957	101	106
1958	99	105
1959	103	110
1960	99	108
1961	102	112
1962	98	107
1963	97	106
1964	93	102
1965	88	95
1966	84	90

*Base: 1954 = 100

Much has been written about the fall in the number of births and there has been a difference of opinion as to the relation of the contraceptive pill to this. In my opinion it is not the number of births which should be compared but the birth rate, that is, the births per thousand population, particularly the rates of women of child bearing age.

The crude birth rate fell from 23·1 in 1962 to 19·8 in 1966. However, a rate was recorded of 21·3 for the first quarter of 1967. It was 21·0 for the first quarter of 1965 and 20·6 for the first quarter of 1966.

TABLE II

BIRTHS ACCORDING TO AGE-GROUP OF MOTHER AND NUMBER OF BIRTHS PER 1,000 WOMEN IN VARIOUS AGE GROUPS—QUEENSLAND, 1961–1966, INCLUSIVE

Year	Age of Mother					
	15–19	20–24	25–29	30–34	35–39	40–44
1961—						
Number of Births	3,043	11,606	10,240	6,910	3,669	1,087
Female Population	60,036	48,210	44,080	48,179	50,080	47,085
Births per 1,000 Women	50·7	240·7	232·3	143·4	73·3	23·1
1962—						
Number of Births	2,987	11,469	10,061	6,539	3,499	1,048
Female Population	64,329	49,681	44,316	47,242	49,381	47,732
Births per 1,000 Women	46·4	230·9	227·0	138·4	70·9	22·0
1963—						
Number of Births	3,319	11,432	10,187	6,365	3,397	1,162
Female Population	67,965	51,617	44,915	46,399	49,228	48,903
Births per 1,000 Women	48·8	221·5	226·8	137·2	69·0	23·8
1964—						
Number of Births	3,605	11,265	9,735	5,882	3,327	1,050
Female Population	70,280	54,105	46,149	45,300	49,217	49,008
Births per 1,000 Women	51·3	208·2	210·9	129·8	67·6	21·4
1965—						
Number of Births	3,849	11,126	9,270	5,305	2,997	921
Female Population	71,684	57,404	47,169	44,723	48,672	49,701
Births per 1,000 Women	53·7	193·8	196·5	118 6	61·6	18·5
1966—						
Number of Births	4,163	10,823	9,080	4,982	2,831	872
Female Population	74,820	61,570	49,210	44,760	49,100	50,520
Births per 1,000 Women	55·6	175·8	184·5	111·3	57·7	17·3
Percentage Increase or Decrease in rates, 1962–66	+19·8	−23·9	−18·7	−19·6	−18·6	−21·4

From Table II it will be seen that since 1962, the first year the effect of the pill was really felt, there was a percentage increase in the birth-rate in the 15-19 years group while a decrease has taken place in all other five year age groups of the child-bearing period.

TABLE III

NUPTIAL CONFINEMENTS PER 100 MARRIAGES OF WOMEN UNDER 35 YEARS OF AGE—QUEENSLAND

FIRST CONFINEMENTS

Duration of Marriage	Year of Birth						Percentage Increase or Decrease 1962–66
	1961	1962	1963	1964	1965	1966	
Under 9 months	31·9	29·1	30·1	30·8	30·0	29·8	+2·4
9–12 months	19·5	18·4	16·0	14·7	12·3	10·6	−42·4
1–2 years	27·5	27·1	26·0	24·4	23·6	23·0	−15·1
2–3 years	11·3	10·2	10·3	11·0	11·9	12·2	+19·6
3–4 years	6·0	5·7	6·0	5·9	6·3	6·9	+21·1
4–5 years	3·7	3·3	3·6	3·6	3·9	4·2	+27·3
5 years and over	9·2	8·7	8·5	8·8	8·3	8·6	−1·1

OTHER CONFINEMENTS

Duration of Marriage	1961	1962	1963	1964	1965	1966	Percentage Increase or Decrease 1962–66
Under 1 year	..	..	..	..	..	..	..
1–2 years	11·2	11·9	11·1	10·2	9·1	8·4	−29·4
2–3 years	29·4	27·5	28·5	24·3	23·0	20·9	−24·0
3–4 years	28·2	29·4	29·7	28·6	24·6	22·9	−22·1
4–5 years	26·6	26·1	26·2	24·4	23·1	20·4	−21·8
5 years and over	164·2	152·5	154·1	141·3	128·9	121·1	−20·6

From Table III it will be seen the number of nuptial first confinements per 100 marriages of women under 35 years of age in the first nine months of marriage increased since 1962 by 2·4 per cent.; but there was a slight decrease in comparison with last year. There was a percentage decrease for the balance of the first year and in the second year of marriage of 42·4 per cent. and 15·1 per cent. respectively; an increase is seen for the third, fourth, and fifth years of marriage of 19·6 per cent., 21·1 per cent., and 27·3 per cent.; and again a decrease is seen after five years of marriage of 1·1 per cent. It is important to note that births other than first births per hundred marriages all showed a decrease since 1962.

It would be expected that the involuntary births in the 15-19 years age group and the births in the first nine months of marriage would remain high even if the contraceptive pill was the main factor in the fall of the birth rate. Table III would indicate that a proportion of parents who in earlier years would have started their families in the first or second year of marriage have postponed them to the third year or later.

It will be seen from the above the 1966 rate continued to show the same trends as were commented on in my last report. The sharp fall noted there continued, and there were also falls in the specific rates for mothers of different ages—greater for some age groups than others. As was pointed out, it was not clear whether the decreases represented a fall in fertility or a change in the spacing of children due to more objective family planning. It seems most likely that the fall in the rates was related to the wide-spread introduction of new contraceptive pills. Although statistics can never prove causation in such cases and the coincidence in time may be purely accidental, it is my opinion that it is a most important factor in the fall of the birth rate.

In the calendar year of 1966 there were 3,227 illegitimate births which were 9·83 per cent. of all births. 1,237 or 38·33 per cent. of all ex-nuptial births were to mothers under 20 years of age as compared with 36·60 per cent. in 1965.

3,592 first nuptial babies were born to couples married less than nine months. This is 33·72 per cent. of all first nuptial births or 10·94 per cent. of all births.

Of 2,431 first nuptial confinements of mothers under 20 years, 1,828 or 75·20 per cent. children were born within the first nine months of married life.

Of the 3,657 first births to mothers under 20 years of age, approximately 83.51 per cent. would have been ex-nuptial or born within the first nine months of marriage.

TABLE IV

SHOWING THE NUMBER OF EX-NUPTIAL BIRTHS AND RATE PER THOUSAND UNMARRIED FEMALES—1961–66

Year	Under 16 Years		16 and 17 Years		18 and 19 Years	
	Number	Rate	Number	Rate	Number	Rate
1961	54	1·92	246	9·92	386	21·09
1962	62	2·09	225	8·82	400	20·51
1963	57	1·98	304	11·05	470	21·36
1964	84	2·89	362	12·48	544	24·07
1965	107	3·61	431	15·34	634	26·42
1966	91	2·98	441	15·47	705	29·25

I would again invite attention to—

(1) The increase in the ex-nuptial birth rate in the under 20 years age group;

(2) The rate in the under 16 years age group has decreased and there has been a slight increase only in the 16-17 years age group as compared with the increase in previous years while there has been a further increase in the 18-19 years group.

Reference to Table VI would indicate that there was a slight reduction in venereal disease in the 15 years and 16-17 years age groups with an increase in the 18-19 years group. Is it wishful thinking to say parents are keeping better control over the younger teenagers?

The infant mortality rate decreased from 17·8 (598) per thousand live births in 1965 to 17·7 (581) the lowest ever recorded in the State, a decrease of 17. The rates for the Brisbane Statistical Division fell from 15·0 to 14·8, from 19·0 to 18·5 in the other sub-tropical areas, and increased from 21·4 to 21·9 in the tropical area.

There was a decrease in the number of deaths from congenital malformation—from 123 to 111. It is interesting to note that of the 114 deaths from immaturity, all died within the first month of life; of the 111 deaths from congenital malformation 56 died during this period. Little can be done for most malformations while if the birthrate is below 2 lb. 12 oz. the baby does not usually survive.

The rate for immaturity in the three divisions were 2·9, 3·9 and 3·9 respectively; for congenital malformations 3·1, 3·3, and 4·0.

The maternal mortality rate increased from 0·30 per thousand live births in 1965 to 0·40. There were thirteen maternal deaths during 1966.

In an examination of the factors which were responsible for the thirteen maternal deaths in 1966, avoidable factors were established in six cases. This does not mean that the death could or should have been averted. These avoidable factors were determined long after the event; it is easy to be wise then. But it does mean that if the particular avoidable factor in the death could have been averted the outcome might have been different.

The number of deaths from complications of pregnancy, childbirth, and the puerperium, and the appropriate maternal mortality rates for each State and Territory of Australia in 1966 are seen in the following table:—

TABLE V

MATERNAL MORTALITY, 1966

State or Territory	No. of Deaths	Rate
New South Wales	22	0·28
Victoria	16	0·25
Queensland	**13**	**0·40**
South Australia	4	0·20
Western Australia	7	0·41
Tasmania	2	0·27
Northern Territory	..	..
Australian Capital Territory	2	0·86
Australia	66	0·30

Heart disease again heads the list of causes of death, being responsible for 5,253 (35 per cent. of total deaths) as against 4,831 (34 per cent.) in 1965. It is a condition of middle and old age and with an increasing number of people reaching old age an increase in the number of deaths each year must be expected.

Cancer was the second leading cause of death and the high incidence is to be expected as it also occurs in middle and old age. Of the total of 2,193 deaths, 329 died from cancer of the lung (290 males, 39 females). This is an increase of 10 males and an increase of 1 female as compared with 1965 (280 males and 38 females). There were 49 deaths from cancer of the cervix and 188 deaths from cancer of the breast.

The campaign against cancer of the cervix has met with some success. The establishment of units to detect early signs of cervical cancer with subsequent early treatment has met with a ready response from the public and the incidence of this condition in the future should be lowered, even though it might not be totally prevented.

The number of deaths from motor vehicle traffic accidents (457) shows a decrease of 10 compared to the previous year. It is interesting to note the increased use of seat belts and it is hoped that these will be a compulsory installation in all cars during the coming year.

SECTION OF EPIDEMIOLOGY

The total number of notifications received (3,193) showed an increase by 545 as compared with the previous year (2,648). The diseases mainly responsible for this increase were infective hepatitis (687), bacillary dysentery (126), and rubella or as it is better known German measles (62). There was a decrease in notifications from infantile diarrhoea (128), Q. fever (93), scarlet fever (47), and tuberculosis (44).

Only one case of diphtheria was notified, a babe of three months from whom the organism was recovered at autopsy. It is usual in a highly inmunised community like Queensland for a child to receive a sufficient level of antibodies to protect it against this disease for the first six months of life. The cause of death of this babe was primarily eczema with a superimposed diphtheritic infection which was apparently sufficiently severe to overcome the body resistance. There was no diphtheritic membrane in the larynx.

The increase in notification of infective hepatitis cannot be explained. Four hundred and fifty-one cases were reported from the metropolitan area, an increase of 210, and 785 from the extra-metropolitan area, an increase of 477. This is the pattern found in other States and overseas. Infective hepatitis was made notifiable on the recommendation of the National Health and Medical Research Council to ascertain the amount present in the community so that research into the epidemiology could be carried out. The results of this work as yet are disappointing. The big increase cannot be explained. Hygiene throughout the State would have shown some improvement over the previous year so hygiene could not have been the reason. The number of notifications received in 1965-66 was comparatively low which might have meant an increase of susceptibles in the community, this resulting in the increased incidence.

The increase in notifications of leptospirosis by 19 is surprisingly small considering the higher rainfall this year. The incidence was greatest in cane-cutters, dairy farmers, and meat workers in North Queensland. The organism enters the body through the skin and until such time as workers protect themselves against infection by wearing proper clothing they will be liable to infection.

An outbreak of salmonellosis occurred at a holiday resort and was responsible for the greater number of notifications received. The disease except in one case was mild in nature. The greatest co-operation possible was given by the staff of the holiday resort who implemented every recommendation made by officers of the Department. This was a big factor in the epidemic being controlled.

Since June, 1967, Sabin oral poliomyelitis vaccine replaced Salk vaccine as the immunising agent against poliomyelitis. It has the advantage that it produces a higher level of antibodies and is easier to administer being given by mouth. Salk vaccine has been efficient as is seen by the fact no positive case of poliomyelitis has occurred in the last four years in an immunised child. Sabin vaccine needs to be kept at a temperature of 0°-4°C and until such time as all Local Authorities have adequate storage facilities Salk vaccine will be available for their use in immunisation campaigns. Any Local Authority who fails to carry out continuous vaccination campaigns must be morally responsible for any case of diphtheria, tetanus, and poliomyelitis which might occur in its area.

Rubella is a notifiable disease in females over fourteen years of age. This year 185 notifications were received of which 23 were pregnant at the time of onset of the disease. Of this number two had not been confined, two could not be confined and the remaining nineteen had given birth to apparently normal babies. The children will be kept under observation.

The value of immunisation against tetanus was seen during the war and the fall in the number of notifications indicates the use of triple antigen has been worthwhile in conferring immunity in the younger age groups. The number of persons who contracted the disease fell from 18 to 13 and of this number only 3 were under the age of fourteen. One of the 13 had been immunised but he did not receive the recommended booster dose. I cannot stress too strongly that adults should avail themselves of immunisation against poliomyelitis and tetanus.

One hundred and eight Local Authorities out of 132 conduct small-pox vaccination campaigns. The fact that the Commonwealth Health Department exercises strict control in seeing any person entering Australia has a valid certificate of vaccination does not mean an infected person will not get through the barrier. Parents should see their children are vaccinated not later than the second year of life. It is to be regretted the rate of immunisation against this disease is lower than other forms of immunisation in childhood.

SECTION OF ENTHETIC DISEASES

Health authorities throughout the world have expressed concern at the increasing incidence of venereal disease. It will be seen in Table XXII that the number of notified cases increased from 627 in 1950-51 to 1,436 in 1960-61. The numbers of notifications received in the last three years were 1,540, 1,652, and 1,666. It is hoped that these statistics are an indication the curve of incidence has begun to flatten out.

The number of notifications of gonorrhoea increased by 54 but there was a decrease of 16 in the number of notifications of infective syphilis received. It must be accepted that these figures do not reflect the true picture of venereal disease in the State as many doctors fail to honour their obligations in regard to notification of disease. In a report of an investigation into venereal disease in Australia by the Australian Medical Association, the Committee of Enquiry estimated that in one State only 9 per cent. of cases seen privately were notified. This is a matter of grave concern to the Queensland Health Department if the notification rate is as low as this as one of the most important steps of prevention of venereal disease—the tracing of the source of infection—cannot be carried out. When it is appreciated that one infected person infects a number of others, this dereliction of duty on the part of some doctors must be viewed seriously. If evidence could be secured to support a prosecution, action would be taken and the matter reported to the Medical Board.

A dissection of the notifications received in the 15-19 years age group for the last two years into smaller age groups is as follows:—

TABLE VI

NOTIFICATION OF VENEREAL DISEASE IN THE 15–19 YEARS AGE GROUPS

Year	15 years	16 and 17 years	18 and 19 years	Total
1965–66	17	121	234	372
1966–67	14	119	294	427
Total ..	31	240	528	799

It is the responsibility of parents to instruct their children the proper place which sexual relationship should play in their lives and the results of abuse of these relationships but the opportunity should also be taken by leaders of youth clubs and others with opportunities for guiding the young to discuss these questions with the young people with whom they are associated.

The transfer of the Male Clinic to Macrossan Street should take place during the coming financial year and subsequently to one of the teaching hospitals.

It is considered that the teaching of venereal disease to medical students has been inadequate but it is anticipated that clinical teaching will be given to students at the beginning of the next academic year.

SECTION OF DRUGS AND POISONS

Concern has been expressed in Australia and overseas countries at the rise in drug addiction, particularly in regard to heroin. It is my opinion that, apart from addiction to drugs such as morphia and pethidine as a result of therapeutic use, the abuse of dangerous drugs is not prevalent in this State. Departmental inspectors have endeavoured unsuccessfully to obtain evidence against chemists for breaches of the Poisons Regulations in regard to sale of restricted and dangerous drugs. Most drugs come into Queensland from other States with only a small number of chemists making illegal sales.

Doctors in Queensland are required to notify to the Director-General a patient who needs dangerous drugs for a period of more than two months. Chemists are also required to forward cancelled prescriptions of dangerous drugs to him.

In an endeavour to tighten control over drugs the Health Act was amended to provide for certain restricted drugs to be declared dangerous drugs for the purposes of Sections 130 and 131A of the Health Acts. So far amphetamine, barbituric acid, and lysergic acid diethylamide have been declared. This means the Police have power to search any person they suspect of having these declared drugs in their possession. The action taken by the Police has resulted in a number of prosecutions. The amount of the fines and the terms of imprisonment for offences against this section were also increased.

Action has been taken to introduce regulations in regard to the transactions of persons authorised to sell these drugs.

SECTION OF FOOD SUPERVISION

Milk is a food used at all ages but particularly in infancy. It is also an ideal medium for the spread of disease. It is, therefore, imperative that effective supervision and control in its production be exercised.

Most milk sold in Queensland is heat treated. The Milk Tribunal requires modern equipment to be installed yet, despite this, bacteriological examination of milk from some centres periodically shows counts which are in excess of the prescribed standards. This can only be attributed to failure to observe the high standards of hygiene so necessary during the various stages of treatment.

Complaints are constantly being received in regard to dirty milk bottles. These are comparatively few compared with the number of bottles used daily and would be less if the public would not use the bottles for purposes other than the holding of milk.

The standard of pasteurised milk in Queensland is of a high order and indicates, except in very few instances, a high standard of care in factories.

Butchers still continue to use sulphur dioxide as a preservative in mince meat and excessive amounts in sausage meat. The number prosecuted for the adulteration of mince meat dropped from 43 to 34 but there was an increase from 6 to 14 in the prosecutions for excessive amounts of preservative in sausages.

SECTION OF ENVIRONMENT SANITATION

The activities of this section are the least spectacular but the most important of any Health Department as it is the sanitary measures which have been instituted in a community which determine the incidence of many diseases among the population. It is for this reason, now that Local Authorities realise the importance of sewerage that every support should be given to their applications for loan funds for this purpose and for the installation of water supplies.

Complaints are received each year of the pollution of streams and it is hoped that the Committee under the chairmanship of the Co-ordinator-General of Public Works will find an answer to this.

DIVISION OF AIR POLLUTION CONTROL

The atmosphere may be polluted from many sources but the chief source in Queensland is secondary industry. The work of the Director of Air Pollution Control has been limited by staff and accommodation difficulties but he has been actively engaged in advising industry on the best means of preventing atmospheric pollution. The accommodation difficulties should be resolved by the end of the year and the Air Pollution Control engineer should arrive before the end of October.

The draft regulations have been prepared and discussions are taking place with industry and other interested parties. More will be achieved by co-operation with industry than with legislation.

DIVISION OF TUBERCULOSIS

The decrease in notifications of pulmonary tuberculosis from 584 last financial year to 512 and the fall of notifications of active cases found by mass X-ray from 128 to 105 is an indication of the success of the compulsory campaign and the awareness of medical practitioners. The number of positive cases found will fall with each round.

It is to be regretted that it is necessary to prosecute persons for failing to be X-rayed. It is the unknown case that is mainly responsible for the spread of tuberculosis and the individual who refuses X-ray is failing in his obligations to other members of the community as he is a potential source of infection.

The organism causing tuberculosis is known as *Mycobacterium tuberculosis* and is found in active cases of tuberculosis. Of recent years atypical mycobacteria have been found in persons presenting the signs, symptoms, and X-ray appearance of human tuberculosis. For the first time in Australia *M. avium* was isolated from patients showing the characteristics of tuberculosis while other atypical organisms have been recovered from persons showing similar symptoms.

Reference has been made in previous reports to the high tuberculin rate in children particularly in the tropics.

So that the ecology of atypical mycobacteria might be investigated an application was made to the Commonwealth Department of Health for funds to carry out research into the behaviour of these organisms in tropical areas, whether the *M. tuberculosis* has the power to mutate as does *H. influenzae,* and the relation of atypical mycobacteria to abnormal lung conditions. A grant of $181,000 spread over five years was approved, and applications are being called for the necessary research staff.

The mass X-ray campaign is also of value in the detection of cancer of the lung. One hundred and forty-seven cases were seen at the Chest Clinic as against 116 last year. Of this number, 90 were discovered as a result of the mass X-ray campaign. There is no doubt that cigarette smoking plays a big part in the incidence of this condition but despite publicity the smoking habit still shows no sign of reduction in the community.

MATERNAL AND CHILD WELFARE

There was a slight decrease in the infant mortality rate from 17·8 (598) to 17·7 (581) per thousand live births. This is the lowest rate ever recorded in the State.

The number of deaths from immaturity increased from 101 in 1965 to 114. "The Registration of Births, Deaths, and Marriages Act" was amended to provide for the notification of perinatal deaths, that is, any death of a foetus from twenty weeks after conception to twenty-eight days after the birth of the child. This should enable the problem of premature deaths among others to be investigated by a committee similar to the Maternal Mortality Committee. The investigations would cover the reasons why the perinatal deaths occur and how these can be prevented. The registration of perinatal deaths will take effect from 1st October.

DIVISION OF PSYCHIATRIC SERVICES

It is only a short time since most patients suffering from psychiatric illness were treated in psychiatric hospitals. The only general hospital beds designated as psychiatric beds were at the Royal Brisbane and Townsville Hospitals. In the past three years psychiatrists have been attracted to Rockhampton, Toowoomba, Bundaberg and Maryborough (the specialist from Bundaberg visiting Maryborough) because psychiatric beds have been made available in these hospitals. Patients in the psychiatric beds of the Ipswich and Toowoomba Hospitals are visited by the staff of the Special hospitals in those areas. The number of beds at Chermside Neuropsychiatric Hospital will be increased to 142.

The plan to integrate the mental hospitals into the community services has received an impetus in the past three years by the greater number of doctors being attracted to the specialty of psychiatry. The Post-graduate Medical Education Committee supported by the Department of Psychiatry of the University of Queensland has been active in organising suitable courses and this has been made possible by the financial assistance given by the Department. Most of these specialists remain with Psychiatric Services for a short time and then enter private practice.

Approval has been given for a re-organisation of the medical staff of Psychiatric Services which should ensure specialist psychiatrists being attracted to the Department. By the end of the coming financial year I hope to see a psychiatric service in which the only patients in the special hospitals will be those requiring long care.

DIVISION OF WELFARE AND GUIDANCE

The Division of Welfare and Guidance has expanded further with the opening of the Institute of Child Guidance at Spring Hill. Further expansion has been limited by staff shortages and funds, and it is hoped the allocation received by the Department this year to cover all activities will be sufficient to enable the clinics at Toowoomba and Townsville to function as self-contained units.

DIVISION OF LABORATORY SERVICES

Laboratory of Microbiology and Pathology

When public health laboratories were first formed their function was primarily to assist in the diagnosis and control of the communicable diseases and the chemical and bacteriological examination of food and water. This was the position when the Bacteriological Institute was established following the passage of the first Health Act in 1900. Since then its activities have been expanded to non-communicable diseases. It is most progressive and this is due in part to its research activities. These cover co-operation with the Queensland Institute of Medical Research as well as original research such as its investigations into traffic accidents. It also provides a consultation service for public health workers and private practitioners.

The laboratory is recognised as a reference laboratory for Australasia for leptospirosis by the World Health Organization and it is also recognised as a leptospirosis centre and atypical mycobacteria centre for Australia by the National Health and Medical Research Council.

It will co-operate with the research team being formed to investigate the problems of atypical mycobacteria.

The Virology Section which was established last year is very active and is providing a service which is greatly appreciated by the medical profession.

Government Chemical Laboratory

The Government Chemical Laboratory functions as a Public Health Laboratory for the Health Department in its examination of food, milk, water, drugs, and other substances. In addition it acts as a laboratory to the Department of Mines and other Government departments. Its activities have been limited by shortage of staff and accommodation. Some relief will be given in the new year but the amount of space available will be insufficient for its needs. It will eventually have to move to a new site but it is hoped this will be in close proximity to the Health and Welfare Building so that consultation between the various sections of the Department will be readily available.

DIVISIONS OF GERIATRICS

Attention is currently being given to steps which may be taken to meet the problems posed by the aging of the population and the accompanying increase in chronic disease. The Marjory Warren Geriatric Unit at the Princess Alexandra Hospital, which cares for the aged suffering from the ills of old age, does meet these problems.

Patients are admitted to the Unit and are rehabilitated to a stage where they can attend to the activities of daily living. After discharge a public health sister visits the home and advises on any nursing problems which might be met but she does not carry out any actual nursing as this is done by visiting nurses of various voluntary organisations. On discharge, the patient is referred back to his own doctor who is advised by the Director of Geriatrics in regard to treatment and the result of the nurse's visit.

Follow-up is essential to make certain that the patient is carrying out the advice he received while in hospital. If deterioration does occur then he is re-admitted to hospital. Every endeavour is made to keep the patient in the community but if the relatives caring for a patient desire to go on holidays he is re-admitted to enable them to do so.

The Geriatric Unit is responsible for keeping many people actively in the community who otherwise would be bed-ridden and is a fitting memorial to the late Dr. Marjory Warren who assisted in bringing it to the high standard which it occupies in medical treatment in Australia.

DIVISION OF NURSING

There has been a great deal of publicity given in the Press regarding the educational standard required for entrance to nursing and the fact that only four hospitals are recognised as full training schools by the General Nursing Council of Great Britain. The Adviser in Nursing has carried out surveys into the educational standards of student nurses employed in Queensland hospitals and it was found that 2,304 out of a total of 2,588 (89 per cent.) were educated to Junior Public or a higher standard. There are some hospitals in this State who employ the 11 per cent. of girls with Sub-Junior or Eighth grade standard but these are girls who have a desire to become nurses and have subsequently proved themselves to be nurses dedicated to their profession. In the United States where there are nurses trained at University level, doctors prefer the practical or vocational nurse to the University graduate.

As regards recognition in England, one of the requirements of the General Nursing Council is that the hospital training school must have 300 beds with a daily average of 240 patients. It has been the policy of successive Queensland Governments to decentralise as much as possible. One of the results of this is that few of our hospitals are large enough to provide a daily average of 240 and in these cases British registration is given after further periods of training which vary in relation to the size and nature of the hospitals concerned. Queensland nurses have a good name overseas and can obtain positions without any difficulty.

DIVISION OF SOCIAL WORK

Officers of the Division of Social Work play an important part in the psychiatric integration programme. If illness is to be overcome the understanding and co-operation of the patient must be obtained. The doctor endeavours to obtain this within the time he is able to give to a patient but there are many factors involved in recovery from an illness, particularly in relation to a patient suffering from a mental illness, which can only be ascertained in the community. These include living conditions in the home, social relationships, the family economy, and the like.

The training of a social worker is directed towards skill in handling individuals in a different manner to the doctor and health nurse, and a good psychiatric social worker plays an important part in getting a patient back into the community and keeping him there.

The number of social workers available has not been sufficient to fill vacancies in hospitals and there are many social problems met with in community service which could be alleviated when social workers are available. The community has a responsibility as well as the Government to give help to those in need and I would suggest the community makes an effort to find sufficient funds to pay for a social worker instead of waiting for a Government subsidy.

The activities of the Division in the fields of psychiatry, welfare and guidance, alcoholism, and hospitals were extended as social workers became available. The shortage of social workers is felt mostly in the country.

VITAL STATISTICS

Populaton

The estimated population of Queensland at 31st December, 1966, was 1,674,796, an increase of 27,975 (or 1·7 per cent.) for the year. The estimated population living in the Brisbane Statistical Division was 786,350, an increase of 18,139 (or 2·3 per cent.) during 1966.

The population density per square mile is 2·51 persons for the whole of Queensland, 825·12 persons in the Brisbane Statistical Division, and 1·33 persons for the rest of the State; 47·0 per cent. of the population of the State reside in the Capital City Statistical Division area.

TABLE VII

SHOWING POPULATION OF AUSTRALIAN STATES AND THE PERCENTAGE OF ESTIMATED AUSTRALIAN POPULATION RESIDENT IN EACH STATE DURING CERTAIN YEARS (AT 31ST DECEMBER), SINCE 1935

Year	New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania		Australian Capital Territory	Australia
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Number
1935 ..	2,658,672	39·3	1,841,595	27·3	971,297	14·4	586,762	8·4	449,623	6·6	233,623	3·5	14,890	6,755,662
1940 ..	2,790,948	39·4	1,914,918	27·1	1,031,452	14·6	599,056	8·4	474,076	6·7	244,002	3·5	23,134	7,077,586
1945 ..	2,932,998	39·5	2,015,107	27·1	1,084,864	14·6	630,882	8·5	490,088	6·6	250,280	3·4	25,978	7,430,197
1950 ..	3,241,057	39·0	2,237,182	28·1	1,205,418	14·5	722,843	8·7	572,649	6·9	290,333	3·5	37,999	8,307,481
1955 ..	3,526,534	37·9	2,546,332	27·3	1,358,858	14·6	834,661	9·0	668,609	7·2	324,919	3·5	33,960	9,311,825
1960 ..	3,877,261	37·3	2,888,290	27·8	1,502,286	14·5	957,022	9·2	731,033	7·0	355,969	3·4	55,272	10,391,920
1961*r* ..	3,949,670	37·2	2,954,826	27·9	1,531,125	14·4	977,007	9·2	744,845	7·0	353,236	3·3	62,331	10,600,631
1962*r* ..	4,019,407	37·2	3,010,130	27·9	1,552,875	14·4	995,491	9·2	766,385	7·1	358,019	3·3	69,544	10,800,474
1963*r* ..	4,073,807	37·0	3,069,693	27·9	1,584,608	14·4	1,019,223	9·3	787,554	7·2	362,690	3·3	77,273	11,006,317
1964*r* ..	4,137,236	36·8	3,136,128	27·9	1,614,812	14·4	1,048,358	9·3	806,300	7·2	366,354	3·3	84,522	11,227,619
1965*r* ..	4,205,258	36·7	3,193,661	27·9	1,646,821	14·4	1,078,918	9·4	825,945	7·2	369,410	3·2	92,738	11,449,017
1966 ..	4,266,492	36·6	3,247,478	27·9	1,674,796	14·4	1,100,322	9·4	850,100	7·3	373,684	3·2	99,962	11,651,343

r Revised

Births

During 1966, births registered in Queensland totalled 32,843, a decrease of 708 on the previous year. The crude birth rate was 19·8 compared with 20·6 in 1965. The births comprised 16,849 males and 15,994 females, giving a masculinity rate of 105·3.

The natural increase (excess of births over deaths) was 17·982, being equal to an increase of 1·1 per cent. of the population.

The birth rate in Queensland remains relatively high, as compared with other States.

TABLE VIII

CRUDE BIRTH RATE (PER 1,000 POPULATION)

——	*r* 1961	*r* 1962	*r* 1963	*r* 1964	*r* 1965	1966
Commonwealth of Australia	22·9	22·2	21·6	20·6	19·7	19·3
Queensland	**24·2**	**23·2**	**22·9**	**21·9**	**20·6**	**19·8**
New South Wales	22·1	21·4	20·8	19·6	18·7	18·4
Victoria	22·5	22·1	21·6	20·9	20·1	19·9
South Australia	23·1	21·7	21·2	20·2	19·7	18·6
Western Australia	23·2	22·6	22·2	20·9	19·9	20·3
Tasmania	25·4	25·0	23·7	22·6	20·5	19·9
New Zealand	25·5	24·7	25·5	24·1	22·8	22·4
United Kingdom	17·8	18·3	18·4	18·7	18·4	*
United States of America ..	23·4	22·4	21·5	21·2	19·4	*
Canada	26·0	25·5	24·8	23·8	21·4	*

* Not available *r* Revised

Deaths

For the year 1966 deaths from all causes totalled 14,861, giving a crude death rate (deaths per 1,000 mean population) of 8·9 compared with 8·6 in the previous year, and lower than the crude death rate of the Commonwealth of Australia. Table IX compares the crude death rates of Queensland, other States, and certain overseas countries since 1961.

Diseases of the heart (5,253), malignant neoplasms (2,193) and vascular lesions affecting the nervous system (2,072) were again the greatest cause of death in the population.

There were 2,193 deaths from malignant neoplasms as compared with 2,073 in 1965. This is about 15 per cent. of all deaths.

In every 100 male deaths, 48 died of a degenerative vascular disease, 14 of cancer and 8 of accident. In every 100 female deaths, the respective figures are 50, 15 and 4. The fatal accident rate was much higher in males than in females.

TABLE IX

CRUDE DEATH RATE (PER 1,000 POPULATION)

——	*r* 1961	*r* 1962	*r* 1963	*r* 1964	*r* 1965	1966
Commonwealth of Australia	8·5	8·7	8·7	9·1	8·8	9·0
Queensland	**8·4**	**8·6**	**8·5**	**9·1**	**8·7**	**8·9**
New South Wales	9·0	9·3	9·2	9·6	9·3	9·6
Victoria	8·4	8·7	8·9	8·8	8·9	8·9
South Australia	8·1	8·4	8·1	8·6	8·3	8·6
Western Australia	7·8	7·7	7·7	8·1	7·7	8·1
Tasmania	7·9	8·1	7·8	8·7	8·3	8·5
New Zealand	9·0	8·9	8·8	8·8	8·7	8·9
United Kingdom	12·0	11·9	12·1	11·3	11·5	*
United States of America ..	9·3	9·5	9·6	9·4	9·4	*
Canada	7·7	7·6	7·8	7·6	7·5	*

* Not available *r* Revised

Marriages

Registration of marriages, during the year totalled 13,325 compared with 12,967 in 1965. The marriage rate was 8·0 per 1,000 mean population, compared with 7·9 in the previous year. Marriages of minors during the year totalled 8,098, of whom 2,122 were males and 5,976 females.

Infant Mortality

The infant mortality rate of Queensland and other States and certain overseas countries is shown in Table XI, while Table X is a composite one showing the birth rates, infant mortality and reproduction rates of Queensland compared with the Commonwealth of Australia.

The net reproduction rate is higher than the Australian average, whilst the maternal mortality rate declined from 5·77 in 1911 to 0·40 in 1966.

If the crude death rate had remained at the level prevailing in 1900, over 4,700 additional deaths would have occurred in Queensland during 1966. In addition, the expectation of life has been increased by 17 years during that period.

TABLE X

BIRTH, INFANT MORTALITY, MATERNAL MORTALITY, AND REPRODUCTION RATES, QUEENSLAND AND AUSTRALIA

——	Crude Birth Rate		Infant Mortality Rate		Maternal Mortality Rate (1)		Gross Reproduction Rate (2)		Net Reproduction Rate (3)	
	Queensland	Australia	Queensland	Australia	Queensland	Australia	Queensland	Australia	Queensland	Australia
1946	**24·8**	23·7	**29·3**	29·0	**2·26**	1·85	**1·55**	1·46	**1·42**	1·33
1947	**25·6**	24·1	**30·8**	28·5	**1·62**	1·87	**1·64**	1·49	**1·54**	1·36
1948	**24·7**	23·1	**28·0**	27·8	**1·47**	1·40	**1·59**	1·45	**1·51**	1·33
1949	**24·0**	22·9	**24·7**	25·3	**1·44**	1·21	**1·56**	1·46	**1·48**	1·33
1950	**24·4**	23·3	**24·8**	24·5	**1·45**	1·09	**1·60**	1·49	**1·52**	1·42
1951	**24·2**	23·0	**25·7**	25·2	**1·18**	1·05	**1·62**	1·49	**1·54**	1·21
1952	**24·6**	23·3	**24·9**	23·8	**1·03**	0·94	**1·67**	1·55	**1·59**	1·47
1953	**23·9**	22·9	**25·0**	23·3	**0·71**	0·62	**1·65**	1·56	**1·57**	1·48
1954	**23·7**	22·5	**22·3**	22·5	**0·96**	0·69	**1·67**	1·56	**1·62**	1·50
1955	**24·1**	22·6	**20·3**	22·0	**0·62**	0·64	**1·71**	1·59	**1·65**	1·53
1956	**23·5**	22·5	**22·7**	21·7	**0·89**	0·56	**1·72**	1·61	**1·66**	1·55
1957	**24·0**	22·9	**21·6**	21·4	**0·62**	0·63	**1·78**	1·66	**1·72**	1·60
1958	**23·6**	22·6	**19·4**	20·5	**0·47**	0·50	**1·79**	1·67	**1·72**	1·60
1959	**24·3**	22·6	**20·3**	21·5	**0·59**	0·46	**1·87**	1·68	**1·80**	1·61
1960	**23·6**	22·4	**21·0**	20·2	**0·68**	0·53	**1·84**	1·68	**1·77**	1·61
1961	**24·2**	22·9	**20·0**	19·5	**0·76**	0·44	**1·86**	1·73	**1·79**	1·66
1962	**23·2**	22·1	**21·1**	20·4	**0·64**	0·36	**1·79**	1·66	**1·72**	1·60
1963	**22·9**	21·6	**20·1**	19·5	**0·25**	0·27	**1·79**	1·62	**1·72**	1·56
1964	**21·9**	20·6	**19·2**	19·1	**0·29**	0·33	**1·68**	1·53	**1·61**	1·47
1965	**20·6**	19·7	**17·8**	18·5	**0·30**	0·33	**1·57**	1·45	**1·51**	1·40
1966	**19·8**	19·3	**17·7**	18·2	**0·40**	0·30	**1·47**	1·40	**1·42**	1·36

(1) *Maternal Mortality Rate.*—Deaths from puerperal causes per 1,000 live births.
(2) *Gross Reproduction Rate.*—Represents the number of female children born on the average to women living right through the child-bearing years if the conditions on which the rate is based continue.
(3) *Net Reproduction Rate.*—Is the gross reproduction rate corrected for deaths of females from birth to the end of the child-bearing period. It is a more accurate index than the gross reproduction rate. Unless it exceeds unity the population is not replacing itself.

TABLE XI

INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR PER 1,000 LIVE BIRTHS)

—	1959	1960	1961	1962	1963	1964	1965	1966
Commonwealth of Australia	21·5	20·2	19·5	20·4	19·5	19·1	18·5	18·2
Queensland	**20·3**	**21·0**	**20·0**	**21·1**	**20·1**	**19·2**	**17·8**	**17·7**
New South Wales	22·7	21·2	20·8	21·4	19·9	20·3	19·1	19·2
Victoria	21·2	18·5	17·8	18·5	18·9	16·9	17·5	17·4
South Australia	20·7	18·9	20·0	19·2	18·7	19·0	18·4	17·5
Western Australia	20·2	21·6	19·7	22·3	20·4	19·7	21·7	19·3
Tasmania	23·4	19·1	16·8	20·7	17·9	20·1	16·6	14·6
New Zealand	19·9	19·7	19·1	16·6	19·6	19·1	19·5	17·7
United Kingdom	23·1	22·4	22·1	22·4	21·7	20·6	21·0	*
United States of America	26·4	25·7	25·3	25·3	25·2	24·8	24·8	*
Canada	28·4	27·3	27·2	27·6	26·3	24·7	*	*

* Not available.

The causes of death to residents of Queensland during 1966 are shown in Table XII.

TABLE XII

SHOWING CAUSES OF DEATH OF RESIDENTS OF QUEENSLAND, 1963–1966

Causes of Death	Males	Females	Total 1966	Persons		
				1965	1964	1963
Tuberculosis of Respiratory System	36	3	39	40	72	77
Tuberculosis, other	2	2	4	2	3	3
Diphtheria	..	..	..	..	..	..
Whooping Cough	..	..	..	..	1	..
Tetanus	..	2	2	6	11	5
Acute Poliomyelitis	..	..	..	..	..	..
Measles	1	5	6	3	5	3
Infectious Hepatitis	2	7	9	7	13	15
Other Infectious and Parasitic Diseases	25	16	41	40	48	59
Malignant Neoplasms	1,226	967	2,193	2,073	2,149	1,984
Neoplasms, Benign and Unspecified	10	13	23	27	29	27
Hay Fever and Asthma	48	25	73	88	89	57
Diabetes Mellitus	78	113	191	172	169	150
Other Allergic, Endocrine System, Metabolic, and Nutritional Diseases	20	19	39	29	45	29
Pernicious and other Hyperchromic Anæmias	4	8	12	7	8	11
Other Diseases of the Blood and Blood-forming Organs	24	30	54	50	40	35
Mental, Psychoneurotic and Personality Disorders	71	45	116	114	85	64
Vascular Lesions affecting the Central Nervous System	942	1,130	2,072	1,980	1,998	1,859
Other Diseases of the Nervous System and Sense Organs	82	68	150	173	156	142
Diseases of the Heart	3,193	2,060	5,253	4,831	4,656	4,346
Hypertensive Disease	117	157	274	282	332	289
Other Diseases of the Circulatory System	255	204	459	428	520	473
Influenza	6	14	20	15	79	12
Lobar-pneumonia	91	50	141	122	110	95
Broncho-pneumonia	154	129	283	228	328	209
Other and Unspecified Pneumonia	67	51	118	93	124	134
Bronchitis	321	49	370	298	325	294
Other Diseases of Respiratory System	79	51	130	115	161	107
Diseases of Stomach and Duodenum	66	27	93	106	96	103
Appendicitis	7	4	11	14	14	19
Diseases of Liver, Gallbladder, and Pancreas	57	62	119	124	147	131
Other Diseases of Digestive System	86	91	177	161	172	152
Nephritis and Nephrosis	75	73	148	194	201	184
Diseases of Male Genital Organs	59	..	59	59	69	65
Other Diseases of Genito-Urinary System	97	158	255	222	256	207
Deliveries and Complications of Pregnancy, Childbirth, and Puerperium	..	13	13	10	10	9
Diseases of the Skin and Cellular Tissue	6	14	20	20	13	21
Diseases of the Bones and Organs of Movement	21	34	55	54	38	52
Congenital Malformations	92	65	157	184	180	176
Intra-cranial and Spinal Injury at Birth	22	15	37	39	44	44
Other Birth Injury	17	13	30	29	40	45
Post-Natal Asphyxia and Atelectasis	23	22	45	64	57	62
Infections of Newborn	7	8	15	23	18	29
Immaturity Unqualified	69	44	113	100	129	144
Other Diseases Peculiar to Early Infancy	45	42	87	75	91	114
Senility without mention of Psychosis	14	25	39	53	44	86
Symptoms Referable to Systems or Organs	1	..	1	4	11	7
Ill-defined and Unknown Causes	11	6	17	41	29	32
Motor Vehicle Traffic Accidents	336	121	457	467	461	408
Accidental Falls	86	88	174	178	178	113
Accidental Drowning and Submersion	39	7	46	69	74	69
Other Accidents	237	58	295	275	231	213
Suicidal and Self-Inflicted Injury	177	108	285	301	322	289
Homicide and Injury Purposely Inflicted by Other Persons	27	14	41	25	42	22
Total from all Causes	8,531	6,330	14,861	14,114	14,523	13,275

Degenerative diseases of the blood vessels accounted for most fatalities from heart disease and for nearly all deaths from vascular diseases of the central nervous system. Together they accounted for more than 49 per cent. of all deaths. Most of these occur in old people and hence are at present largely unavoidable. However, an increasing number of deaths due to ischaemic heart disease are occurring in middle aged males. Some of these are preventable, because many middle aged men are overweight and are heavy smokers, both of which are known to increase the probability of death. Cancer accounted for 14·8 per cent. of deaths, compared with 14·7 in 1965. Deaths due to motor vehicle traffic accidents, however, have increased from 408 in 1963 to 457 in 1966.

DIVISION OF PUBLIC HEALTH SUPERVISION

Deputy Director-General of Health and Medical Services: D. W. Johnson, M.B., B.S. (Syd.), D.T.M. & H. (Syd.)

Senior Health Officer: P. R. Patrick, M.B., B.S. (Qld.), D.P.H. (Syd.).

Health Officer: M. H. Gabriel, M.B., B.S. (Qld.), D.P.H. (Syd.).

Chief Inspector of Drugs and Poisons: W. H. Kelly

Chief Sanitary Inspector: B. M. Keeffe

Chief Inspector of Foods: C. J. Murray

Inspectors in Charge of District Offices

Townsville: H. P. Lowes

Toowoomba: W. J. Shields

Mackay: E. J. Thomson

Cairns: W. T. Johnston

Rockhampton: K. F. Keefer

Bundaberg: C. J. James; H. R. Hassett

SECTION OF EPIDEMIOLOGY

Tables XVIII and XIX show the reported incidence of notifiable diseases during the fiscal year while Table XX shows the incidence of the same diseases for the calendar year 1966. During 1966-67, notifications totalled 3,193 (1,209 in Brisbane and 1,984 in country districts), compared with 2,648 (1,071 and 1,577) the previous year. The increase of 545 was due mainly to increased notifications in infective hepatitis, bacillary dysentery and rubella. Notifications of infective hepatitis increased from 549 cases in 1965-66 to 1,236 cases, bacillary dysentery from 82 cases to 208 and rubella from 123 to 185 cases. To offset increased notifications in these diseases, there were fewer notifications for infantile diarrhoea (–128), Q. fever (–93), scarlet fever (–47) and tuberculosis (–44).

The number of notifications received does not necessarily indicate the true incidence of a disease. An apparent increase in notifications may be due to some special effort or interest in a certain condition. On the other hand, a decrease may be due to waning enthusiasm on the part of medical practitioners. However it is believed that the figures given do reflect the true picture of communicable diseases in Queensland compared with other years. The increased notifications for infective hepatitis illustrate a definite increase in the prevalence of the disease. For the second year in succession there has been a reduction in the tuberculosis notifications and it is considered this is a genuine reduction in incidence. This reduction is evidence that the campaign against this disease is meeting with success.

Each month medical practitioners are advised of the prevalent communicable diseases in a report published in the News Bulletin of the Queensland Branch of the Australian Medical Association.

Infantile Diarrhoea

Diarrhoea of more than 48 hours duration in infants under two years of age is a notifiable disease in Queensland. The number of notifications received for this condition was 174, being 128 fewer than in the preceding year. In recent years many cases of infantile diarrhoea have been reported in winter months, a contrast to the gastroenteritis of fifty years ago which was a summer disease. The high winter incidence suggested a respiratory spread and a viral causative agent. Laboratories have so far been unable to support this suggestion. In the winter months of 1966 there was no mid-year epidemic and this resulted in the lessening of notifications mentioned. The highest notifications occurred in October, 1966, and a high summer incidence seemed imminent. Fortunately this did not eventuate. The disease is not the scourge of former years. Attempts to isolate the organism from the cases notified were successful in a small minority of patients. When found, they proved to be mostly *E. coli* or a Salmonella organism.

Diphtheria

The only case of diphtheria notified was reported after an autopsy in a three months old baby. The child had suffered from an eczematous rash and large numbers *C. diphtheriae* were grown from the skin and larynx. The child was not immunized. Last year no case was notified and the incidence over the last ten years has been four cases per year. The disease which was responsible for as many as 3,232 notifications and 87 deaths in 1920 is now no longer the danger to life it once was. However there must be no complacency and immunization campaigns against the disease must not be allowed to slacken.

Infective Hepatitis

Since infective hepatitis was made a notifiable disease in June 1957, this disease has been responsible for a large proportion of the total notifications for all diseases. This year, 1,236 notifications of infective hepatitis were received. This number is approximately 700 more than the cases notified last year and the second highest in the last ten years.

It is difficult to ascertain the cause for this increase. The disease is spread by the faecal-oral route. Diseases spread in this way are usually more prevalent in the summer months. There was some rise during January and February in the country areas of the State, but the notifications occurred throughout the whole year and in Brisbane there was a fairly even monthly distribution. There is nothing to indicate that the rise was due to a serious breakdown in hygiene in the community.

Table XIII sets out the incidence according to age groups. It shows that the highest incidence is in the 5–14 years group and that after fifty years the number of reported cases lessens.

For a number of years now there have been expectations that an effective vaccine would be produced. Rightsel, in America, reported the isolation of the virus in 1961. In Australia, workers at Fairfield Hospital, Melbourne, reported the isolation of a virus from patients with the disease. These reports are promising and it is hoped that further research will produce an effective protective agent. Until that eventuates, the only measures available are the use of gamma globulin for close contacts which gives a short-lived protection, coupled with good sanitation and personal hygiene.

TABLE XIII

Showing Age Distribution of 1,236 Notified Patients with Infective Hepatitis Notified During 1966-67

Age Group in Years	Number of Cases	Percentage of Total Cases
0–4	47	3·8
5–14	404	32·7
15–24	290	23·5
25–34	225	18·2
35–49	179	14·5
50 years and over ..	72	5·8
Not stated	19	1·5
Totals	1,236	100·0

Leptospirosis

Leptospirosis occurs in association with animals and wet soil. A higher rainfall in the first half of 1967 was recorded in Queensland but did not produce any great increase in the disease. The incidence was higher than in 1965-66, but the number of cases reported (79), has often been exceeded. The disease is associated with certain occupations. In Queensland the occupations which produce nearly all the cases are dairy farmers, cane cutters and meat workers. Table XIV sets out the statistical divisions in which the cases occurred, the age groups, hospitalisation and sex. From the table it will be noted that the disease is mostly confined to coastal areas where the above occupations are carried on.

The highest incidence occurred in the Cairns division. The cases here occurred in cane cutters and meat workers. As may be expected, the disease occurs mostly in males. The females who contracted the disease were associated with dairy and cane farms. The meat and dairy industries each provided 21 cases. In the dairy industry cases, a big proportion of patients handled pigs during their occupation. The cane industry was responsible for 10 cases. Wading in flood waters in North Queensland was given as the source of infection in five cases.

TABLE XIV

SHOWING GEOGRAPHICAL LOCATION ACCORDING TO STATISTICAL DIVISIONS AND AGE GROUPS OF PATIENTS WITH LEPTOSPIROSIS NOTIFIED DURING 1966-67

Statistical Divisions	0–9	10–19	20–29	30–39	40–49	50–59	60–69	70 and over	Un-known	Totals	In Hos-pital	Not in Hos-pital	Males	Fe-males
Metropolitan	1	2	3	5	..	..	1	..	1	13	7	6	12	1
Moreton	2	4	3	3	..	1	..	..	..	13	11	2	12	1
Maryborough	..	1	3	2	1	1	..	..	..	8	3	5	8	..
Downs	..	2	3	1	..	..	1	..	..	7	2	5	7	..
Roma	..	..	..	..	1	..	..	..	..	1	..	1	1	..
South Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rockhampton	..	1	1	..	1	..	..	..	..	3	3	..	3	..
Central Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Far Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mackay	..	1	..	..	..	..	..	..	..	1	1	..	1	..
Townsville	..	..	..	..	1	..	..	..	..	1	1	..	..	1
Cairns	1	6	10	6	2	4	2	..	..	31	30	1	31	..
Peninsula	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Western	..	..	..	..	..	..	1	..	..	1	..	1	1	..
Outside Queensland	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	4	17	23	17	6	6	5	..	1	79	58	21	76	3

Melioidosis

Three cases of melioidosis were notified. Cases reported in previous years have come from Torres Strait islands and North Queensland. The three present cases all came from South Queensland, although there was some previous habitation in the north. One case had worked on Thursday Island for three weeks, approximately six weeks prior to the onset of the disease. The other two cases had been in North Queensland and New Guinea several years previously. It is unknown whether they may have harboured the causative organism (*Lf. pseudomallei*) during this time.

All three cases had an underlying chronic illness. Two were diabetics and the third suffered from what was most likely splenic anaemia. One case ended fatally, the other two recovered after prolonged sulphonamide therapy with shorter periods of antibiotic medication.

Some features of this disease are known. Animal reservoirs are sheep, cattle, pigs and goats and the organism has been found in soil. However much is still to be learnt. One important feature that is not known is the mode of transmission. An insect vector has been suggested and the Queensland Institute of Medical Research is investigating the possible transfer by mosquitoes.

Meningitis

TABLE XV

SHOWING THE NUMBER OF VARIOUS TYPES OF MENINGITIS IN TWO MAJOR AGE GROUPS

Type	0–14 years	15 and Over	Total
Meningococcal	20	5	25
Influenzal	16	..	16
Aseptic	22	28	50
Pneumonococcal	2	3	5
Unknown	13	9	22
Totals	73	45	118

During 1966-67 the number of all forms of meningitis reported was 118, being almost the same incidence as in the previous year. Table XIV sets out the number of cases due to the various organisms and the distribution in two age groups. Children bear the brunt of the attack from meningococcal and influenzal meningitis. Aseptic meningitis which was responsible for the most notifications occurs at all ages. Pneumonococcal meningitis which is a relatively rare disease, was also fairly evenly distributed between all ages. The diagnosis of aseptic meningitis has been made in previous years mainly on clinical findings. However, in the present year, the Virology Section of the Laboratory of Microbiology and Pathology has been successful in demonstrating the virus in sixteen cases. The causative organisms included Coxsackie, Echo and adeno-viruses.

Poliomyelitis

No confirmed case of poliomyelitis occurred in Queensland. One suspect case reported was later found to be not suffering from the disease. In the past four years only one case of poliomyelitis has occurred in the State. During the previous year an unimmunized boy on Thursday Island contracted the disease.

In accordance with the recommendation of the National Health and Medical Research Council, Queensland commenced using Sabin Oral Poliomyelitis Vaccine in June, 1967. The inactivated (Salk) poliomyelitis vaccine introduced in 1956 to Queensland has been responsible for a greatly reduced incidence of the disease but it is considered that the oral vaccine is an even more effective preparation. In addition to the production of protective antibodies in the blood stream, it creates a local immunity in the gut which prevents the virus from multiplying. The inactivated vaccine does not have this property. The vaccination campaign will be under the control of the local authorities. By the end of June 100,000 doses had been administered. A promising response to the oral vaccine is expected in the school and pre-school population.

Q. Fever

Notifications for Q. fever decreased from 343 cases in 1965-66 to 250 cases this year. This disease is an occupational hazard. The main occupations which supply the cases are associated with sheep, meat and dairy industries. The decrease this year arose from fewer cases in the meat and dairy occupations. Meatworkers numbered 141, as against 177 in the previous year, and dairy farmers provided 27 cases, this number being 34 less than in 1965-66. Two cases were reported in kangaroo shooters. Table XVI sets out the age groups, sex and statistical divisions from which the cases were reported. The disease is reported mostly from the male population as this sex is more exposed to risk in their occupation. The fifteen female cases reported came from women working in abattoirs and the wives of dairy farmers. Cases in children also came from dairy farms.

TABLE XVI

SHOWING DETAILS OF GEOGRAPHICAL LOCATION AND AGE DISTRIBUTION OF 250 CASES OF Q. FEVER DURING 1966–67

Statistical Divisions	0–9	10–19	20–29	30–39	40–49	50–59	60–69	70 and over	Un-known	Totals	In Hos-pital	Not in Hos-pital	Males	Fe-males
Metropolitan	..	8	13	10	14	9	4	1	2	61	34	27	58	3
Moreton	..	5	6	6	2	4	..	..	..	23	10	13	22	1
Maryborough	..	1	2	8	5	5	2	1	1	..	25	14	11	24	1
Downs	..	1	3	13	7	7	4	3	..	..	38	15	23	38	..
Roma	..	..	4	8	14	6	4	..	..	..	36	17	19	34	2
South Western	..	..	1	2	1	1	1	..	..	..	6	2	4	6	..
Rockhampton	..	..	8	10	6	8	5	1	..	..	38	20	18	33	5
Central Western	..	..	2	1	2	..	1	..	..	..	6	5	1	6	..
Far Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mackay	..	..	..	2	..	2	..	..	..	..	4	2	2	3	1
Townsville	..	..	2	1	2	2	..	..	..	..	7	3	4	7	..
Cairns	..	..	1	1	3	..	..	1	..	..	6	3	3	4	2
Peninsula	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	..	2	36	65	56	47	30	10	2	2	250	125	125	235	15

Rubella

Rubella, once regarded as an innocuous disease, sprang into prominence in 1940, when Gregg drew attention to eye abnormalities occurring in babies born to mothers who had suffered from the disease during the first trimester of pregnancy. Later workers found that such babies were also likely to have other abnormalities including deafness, heart defects and mental subnormality.

During 1966-67, there were 185 notifications of rubella. Twenty-three patients were pregnant at the time of onset of the disease. It has been possible to ascertain the outcome of pregnancy in nineteen cases. Two women had not been confined at the end of the year and two could not be traced. No baby had any apparent abnormality although one infant died at three weeks from a massive cerebral haemorrhage. An autopsy on this latter child revealed no congenital abnormality. What may be significant however, is that in three women who contracted rubella at eight to ten weeks, the pregnancy terminated with a miscarriage.

Salmonellosis

In December, 1966, an investigation was made of an outbreak of gastro-enteritis at a holiday resort. The chief symptoms were abdominal cramps, vomiting and diarrhoea, the incubation period being as short as thirteen hours and the duration of the illness 48 hours. The whole picture was one of an ingestion disease. Both staff, including food-handlers, and guests were affected.

Despite painstaking work of bacteriologists it was some weeks before salmonella organisms were isolated from both food-handlers and guests. This was no doubt due to the administration of prophylactic drugs including anti-biotics. Analysis of likely sources in the food and water supply also failed to produce an organism at any stage.

Although bacterial examination did not support a food-borne outbreak in the early stages, the occurrence of cases in the food-handlers pointed to the outbreak being food-borne and the area of infection being in the kitchen and dining room. Strict hygiene measures introduced reduced the incidence but the disease smouldered for some time with moderate increases in cases after a lapse in hygiene.

When salmonella organisms were eventually isolated, a complete further examination of all food-handlers revealed several carriers. These were immediately removed from any occupation likely to involve a risk of spreading the disease.

The outbreak was a difficult one to control for many reasons. It was some weeks before the epidemic was reported to this department. The introduction of prophylactic drugs clouded bacterial examinations. Many of the staff were transient workers and poorly versed in hygiene. The guest population was continually changing bringing new susceptibles into the area.

Salmonellosis was also reported from other areas in the State. It was responsible for some of the notifications of infantile diarrhoea and outbreaks of gastroenteritis on a minor scale.

Treatment of the cases and carriers is difficult. The antibiotics have limited and irregular effects on the disease.

Smallpox

In 1913, five cases of a mild type of smallpox were discovered in Toowoomba, Ipswich and Brisbane. These are the only cases of the disease that have originated in Queensland. They occurred at a time when travel from countries where smallpox is endemic to Australia was by ship and took several days. This period allowed any person incubating the disease to develop definite symptoms and be quarantined on arrival. With the whole world being only hours away by air-travel, the danger of introduction of the disease has greatly increased.

To combat this risk, local authorities have been urged to carry out vaccination campaigns. Since 1959, when the first recommendation was made, 108 local authorities from a total of 132 in Queensland have instituted vaccination. Twenty-three commenced campaigns during the year. Since 1959, the Commonwealth Serum Laboratories have supplied over 300,000 doses of smallpox vaccine to local authorities and private practitioners in Queensland. Of these, 38,000 doses were distributed during 1966-67. The figures relate to the civilian population. It is estimated that 20 per cent. of the population have had primary vaccination against the disease. There is room for improvement but the increase in the number of local authorities offering vaccination is pleasing.

Tetanus

Immunization against tetanus began in Queensland fifteen years ago when local authorities and private practitioners commenced using triple antigen. Children are well protected against the disease but apart from adults who were immunized in the Armed Forces, the older aged group are poorly protected.

The results of this varying immunization status are seen when the notifications of the disease received during the year are studied. Firstly, the total number of notifications, viz., thirteen cases, is the lowest on record, and secondly, the reduction has been mainly in the lower age group. Of the thirteen cases, only three were 14 years of age and younger.

Only one of the thirteen cases had been immunized. This was a boy of thirteen who had a primary course of triple antigen as a baby but no booster injection.

The treatment for tetanus has improved and greatly reduced the death rate from the disease. The use of curare, intubation and the respirator has reduced the death rate from 56 per cent. twenty years ago to 17 per cent. during the present series of cases.

Table XVII shows the drop in the notifications in the younger age groups and the overall lessening of the death rate.

TABLE XVII

SHOWING THE INCIDENCE IN VARIOUS AGE GROUPS AND DEATHS FROM TETANUS FOR THE TWO PERIODS 1945–49 AND 1966–67

Age Group	1945–49		1966–67	
	Number	Percentage	Number	Percentage
Under 1 year	6*	3·75	Nil	Nii
1 to 14 years	63	39·38	3	23·1
15 to 29 years	35	21·87	Nil	Nil
Over 30 years	56	35·00	10	76·9
Totals	160	100·00	13	100·0
Deaths	89	56	2	15

* All neo-natal cases

TABLE XVIII

NOTIFIABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1ST JULY 1966 TO 30TH JUNE, 1967
METROPOLITAN AREA

Disease	Months												Totals 1966–67	Totals 1965–66
	1966						1967							
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June		
Ancylostomiasis	..	..	1	..	..	..	..	..	..	..	..	..	1	3
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breast Abscess	..	..	..	1	2	..	..	1	..	2	..	2	8	13
Brucellosis	..	..	..	..	..	..	..	..	1	..	..	1	2	..
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	..	11	17	16	3	..	..	7	1	5	14	8	82	165
Diphtheria	1	..	..	..	..	..	..	..	..	..	..	..	1	..
Dysentery (Amoebic)	..	..	..	1	..	..	..	..	..	..	..	..	1	5
Dysentery (Bacillary)	3	4	4	5	1	5	2	4	1	5	3	1	38	30
Encephalitis	..	1	1	..	4	1	..	..	1	1	..	..	9	9
Filariasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hepatitis (Infective)	29	46	39	20	30	18	40	57	49	41	45	37	451	241
Hydatid Disease	..	..	..	..	2	..	..	1	2	..	..	..	5	2
Lead Poisoning	..	..	..	1	..	..	..	..	..	..	..	..	1	..
Leprosy	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Leptospirosis	1	..	..	3	..	..	1	..	..	2	1	5	13	11
Malaria	3	5	3	3	2	1	..	1	4	2	4	4	32	12
Melioidosis	..	..	..	1	..	..	..	..	..	..	..	..	1	..
Meningitis	..	2	9	9	8	8	8	7	5	4	..	4	64	60
Neo-Natal Infections	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Ornithosis (Psittacosis)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poliomyelitis (Paralytic and Non-Paralytic)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Infections	..	..	..	..	..	..	..	..	..	1	..	..	1	1
Q. Fever	1	4	5	3	3	4	2	3	7	2	4	23	61	87
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatic Fever	4	4	4	2	7	4	3	4	4	3	3	4	46	59
Rubella	1	1	14	29	22	8	5	3	..	..	..	1	84	63
Scarlet Fever	8	4	2	10	5	2	2	4	13	1	5	12	68	85
Smallpox	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Taeniasis	..	..	..	..	..	..	..	..	..	..	1	..	1	1
Tetanus	..	..	1	..	..	..	..	1	2	..	..	..	4	7
Tuberculosis	18	13	17	20	19	28	16	19	22	23	16	23	234	214
Typhoid Fever (including Paratyphoid)	..	..	..	..	..	..	..	..	..	..	..	1	1	1
Typhus Fever—														
Epidemic	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Murine	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Scrub	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tick	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	69	95	117	124	108	79	79	112	112	92	96	126	1,209	1,071

TABLE XIX

NOTIFIABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1ST JULY 1966 TO 30TH JUNE, 1967
EXTRA METROPOLITAN AREA

Disease	Months												Totals 1966–67	Totals 1965–66
	1966						1967							
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June		
Ancylostomiasis	..	..	1	1	..	1	..	..	1	..	1	..	5	13
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breast Abscess	2	6	..	..	..	1	..	..	..	..	1	..	10	9
Brucellosis	..	..	1	..	2	..	..	..	..	1	2	..	6	8
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	3	7	3	28	13	7	6	6	16	..	1	2	92	137
Diphtheria	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dysentery (Amoebic)	..	..	..	..	1	..	1	1	1	1	..	1	6	5
Dysentery (Bacillary)	2	4	4	19	34	7	40	46	12	1	1	..	170	52
Encephalitis	1	1	..	..	..	2	..	3	1	..	..	..	8	10
Filariasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hepatitis (Infective)	19	74	68	65	58	67	94	88	73	59	56	64	785	308
Hydatid Disease	..	..	..	..	..	..	..	..	1	..	..	..	1	2
Lead Poisoning	..	..	..	1	..	..	..	..	..	..	..	..	1	..
Leprosy	..	1	..	..	..	..	..	..	1	1	..	..	3	..
Leptospirosis	5	5	1	3	1	4	4	5	8	10	11	9	66	49
Malaria	1	2	1	2	..	1	2	1	3	2	1	2	18	19
Melioidosis	1	..	..	1	..	..	..	..	..	..	..	..	2	4
Meningitis	2	2	6	7	4	3	9	2	3	4	3	9	54	62
Neo-Natal Infections	..	1	..	..	..	2	1	..	..	..	3	..	7	9
Ornithosis (Psittacosis)	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Plague	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poliomyelitis (Paralytic and Non-Paralytic)	..	..	..	..	..	..	..	..	..	1	..	..	1	2
Puerperal Infections	3	4	..	1	..	..	..	2	..	1	3	1	15	18
Q. Fever	6	3	8	11	10	6	3	18	22	30	28	44	189	256
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatic Fever	3	4	1	4	4	6	4	2	1	..	4	2	35	44
Rubella	2	11	23	17	25	9	7	2	1	3	1	..	101	60
Scarlet Fever	5	5	3	6	8	1	4	4	9	5	5	7	62	92
Smallpox	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Taeniasis	..	..	1	1	..	..	..	..	..	..	..	..	2	8
Tetanus	2	2	..	..	..	..	..	..	1	1	1	2	9	11
Tuberculosis	27	36	38	36	16	39	23	19	35	18	20	22	329	393
Typhoid Fever (including Paratyphoid)	..	1	1	..	..	..	1	..	..	..	..	..	3	3
Typhus Fever—														
Epidemic	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Murine	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scrub	2	..	..	1	..	..	..	..	..	..	1	..	4	1
Tick	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	86	169	160	204	176	156	199	199	189	138	143	165	1,984	1,577

TABLE XX

NOTIFIED INCIDENCE OF COMMUNICABLE DISEASES IN QUEENSLAND (EXCLUSIVE OF VENEREAL DISEASES) SECTION 29 OF "THE HEALTH ACTS, 1937 TO 1967," DURING THE CALENDAR YEAR OF 1966

Disease	Metropolitan Area	Outside Areas	Total for Queensland 1966	Total for Queensland 1965
Ancylostomiasis	1	7	8	63
Anthrax	..	..	..	..
Breast Abscess	12	12	24	23
Brucellosis	..	11	11	10
Cholera	..	..	..	..
Dengue	..	..	..	..
Diarrhoea (Infantile)	99	99	198	293
Diphtheria	1	..	1	..
Dysentery (Amoebic)	3	2	5	16
Dysentery (Bacillary)	43	108	151	35
Encephalitis	13	10	23	9
Filariasis	..	..	..	..
Hepatitis (Infective and Serum)	312	531	843	555
Hydatid Disease	3	1	4	2
Lead Poisoning	1	1	2	3
Leprosy	..	1	1	1
Leptospirosis	10	45	55	75
Malaria	27	17	44	28
Melioidosis	1	6	7	..
Meningitis	74	58	132	113
Neo-Natal Infections	..	6	6	9
Ornithosis (Psittacosis)	..	1	1	1
Plague	..	..	..	..
Poliomyelitis (Paralytic and Non-Paralytic)	..	1	1	2
Puerperal Infections	1	19	20	22
Q. Fever	72	198	270	360
Relapsing Fever	..	..	..	..
Rheumatic Fever	60	41	101	109
Rubella	89	94	183	113
Scarlet Fever	61	62	123	171
Smallpox	..	..	..	..
Taeniasis	1	5	6	5
Tetanus	7	9	16	17
Tuberculosis	202	410	612	673
Typhoid Fever	1	5	6	2
Typhus Fever — Epidemic	..	..	..	..
Typhus Fever — Murine	1	..	1	1
Typhus Fever — Scrub	..	4	4	2
Typhus Fever — Tick	..	..	..	1
Yellow Fever	..	..	..	..
Totals	1,095	1,764	2,859	2,714

HANSEN'S DISEASE

Medical Supervision: M. H. GABRIEL, B.Sc., M.B., B.S. (Q'ld), D.P.H. (Sydney), A.R.A.C.I., Health Officer

(1) HANSEN'S DISEASE IN THE WHITE POPULATION

STATISTICS

——	Males	Females	Total
(*a*) *Calendar Year*, 1966			
Persons in isolation at 1st January, 1966	5	1	6 (a)
Admitted	4 (b)	..	4 (b)
Discharged	4 (b)	..	4 (b)
Died	..	..	..
Persons in isolation at 31st December, 1966	5	1	6 (a)
(*b*) *Financial Year*, 1966–67			
Persons in isolation at 1st July, 1966	8 (b)	1	9 (a)(b)
Admitted	1	..	1
Discharged	4 (b)	..	4 (b)
Died	..	..	..
Persons in isolation at 30th June, 1967	5	1	6 (a)

(a) These totals include one male and one female patient given special permission to remain in hospital although eligible for discharge.

(b) These totals include three male patients readmitted temporarily for conditions other than Hansen's disease.

The following comments refer to the financial year 1966-67.

It is pleasing to be able to record that no new white cases of Hansen's disease have been detected during the year. The one male patient admitted was a readmission. He showed minimal signs of reactivation clinically, but routine bacteriological tests were fairly strongly positive. He is making excellent progress.

The fact that no new cases have been detected in the white population does not mean that no effort has been made to detect them. On the contrary, there are increasing numbers of persons with dermatological and neurological conditions being referred to the Health Officer for an opinion. Several clinically suspicious cases have been detected and are being followed up regularly.

Drug treatment and the general management of patients remain as recorded for the past several years. The weekly clinic for ex-patients which is held at the special isolation ward at Princess Alexandra Hospital continues to be popular and well-attended.

The only new case seen for the first time was a female patient, nineteen years of age, from the Mount Isa area. She appears to be a relatively early case and is making splendid progress. The male patient admitted was a readmission showing minimal signs of reactivation. He was detected as the result of routine follow-up testing.

As with the white patients, drug treatment and the general management of cases remain as recorded for previous years. Despite the small numbers of coloured persons in isolation, it has been found both practical and advantageous to continue to use the isolation hospital at Fantome Island in the Palm Group, some forty miles north of Townsville. Nursing and general administration are still in the hands of a religious order, and this is the reason why it is possible for the hospital to be maintained for so few patients.

(2) HANSEN'S DISEASE IN THE COLOURED POPULATION

STATISTICS

——	Males	Females	Total
(*a*) *Calendar Year*, 1966			
Patients at 1st January, 1966	9	6	15
Admitted	1	..	1
Discharged	5	5	10
Died	..	..	..
Patients at 31st December, 1966	5	1	6
(*b*) *Financial Year*, 1966–67			
Patients at 1st July, 1966	5	1	6
Admitted	1	1	2
Discharged	..	1	1
Died	..	..	..
Patients at 30th June, 1967	6	1	7

GENERAL REMARKS CONCERNING HANSEN'S DISEASE

Now that the numbers of active cases have been so much reduced, it is not too much to hope for that Hansen's disease may be completely eliminated from Queensland in the foreseeable future. All practising physicians are encouraged to refer doubtful dermatological and neurological cases and many have availed themselves of this service.

Medical graduates in this State are given ample opportunity to become familiar with the clinical signs of Hansen's disease and there is evidence that they do keep the diagnosis in mind when faced with diagnosing skin and nerve conditions.

A considerable amount of success has been achieved in regularly following up all discharged cases. There are about eighty white persons and about one hundred and ten coloured persons who are ex-Hansen's patients and who are known to be still living in Queensland. The majority of these co-operate quite readily by attending for clinical and bacteriological examinations and to collect supplies of maintenance drugs at the centres notified to them. Defaulters can be traced in most instances so that it is seldom that an ex-patient is lost sight of for very long and very seldom for periods in excess of two years.

This follow-up work and the checking of contacts and suspects is now by far the greater part of Hansen's disease work in the State.

The Health Officer, during the course of a study tour overseas during 1966, spent periods of time at several centres to study new developments in and to revise clinical features of Hansen's disease. These centres included the Indian Government's Central Leprosy Training and Research Institute at Chingliput in South India, the Communicable Disease Centre, Atlanta, Georgia, the U.S. Public Health Service Hospital at Carville in Louisiana, several centres in California and in Hawaii. The experience was valuable. He also attended a session of the Tropical Medicine and Health Committee of the National Health and Medical Research Council held in Sydney in May, 1967, to assist in the revision of the Committee's recommendations for the management of Hansen's disease in Australia.

SECTION OF ENTHETIC DISEASES

Medical Officer in Charge: GEOFFREY HAYES, M.B., Ch.M. (Syd.)

The total number of notifications of venereal diseases notified in Queensland during 1966-67 was 1,666, compared with 1,652 in 1965-66. These figures indicate no significant increase during the year. The sex distribution of notified cases was:—Males 1,221 and Females 445. Nevertheless the incidence of these diseases now exceeds 100 cases per 100,000 population, having increased from 50·6 per 100,000 in 1951-52 to 99·8 in 1961-62. However, it is also apparent that the rising trend of previous years appears to be levelling out.

Table XXI shows that 961 notifications came from the metropolitan area and 705 from outside centres. This compares with 1,108 and 544 in the previous year. This shows a definite increase in males from the country centres.

Table XXII shows the gradual increase in notified venereal diseases in Queensland since 1951-52. It will be seen that the current increase commenced about ten years ago and since then has shown a progressive increase in the rate per 100,000 population. The table also indicates that the 15-19 year age group has shown a progressive increase in the percentage of notified cases. Since 1951-52, the percentage of patients in this age group has increased from 10·1 to 22·2. The highest percentage in this age group occurred in 1960-61, when it reached more than one-third of all notified cases.

This report on the incidence of venereal diseases would be incomplete without reference to the recent findings of the Australian Medical Association Science Committee published in March, 1967, in The Medical Journal of Australia. This committee considered that probably only about one in every eleven cases of venereal diseases are being notified at present. Some medical practitioners do not appear to notify cases and remedial action of some kind is indicated.

At the present time, medical students in the clinical years have very little opportunity to learn about venereal diseases and this also is a situation which will soon be remedied. Medical students should be able to attend the clinics in order to extend their knowledge of these important diseases.

Tables XXIII to XXVII show various aspects of the epidemiology of venereal diseases in Queensland.

TABLE XXI

NOTIFIED VENEREAL DISEASES IN QUEENSLAND, 1966–67

—	Metropolitan		Outside Centres		Whole State		Total
	Males	Females	Males	Females	Males	Females	
Gonorrhoea—							
Unspecified	..	..	..	..	..	..	..
Acute	620	144	440	139	1,060	283	1,343
Sub-acute	4	55	14	17	18	72	90
Chronic	..	8	5	13	5	21	26
Ophthalmia	..	1	..	1	..	2	2
Vulvo-vaginitis	..	..	..	2	..	2	2
	624	208	459	172	1,083	380	1,463
Syphilis—							
Unspecified	..	..	..	..	..	..	..
Primary	14	18	15	7	29	25	54
Secondary	8	13	19	11	27	24	51
Tertiary	4	5	2	1	6	6	12
Latent	7	3	2	3	9	6	15
Neuro	4	1	1	..	5	1	6
Pre-natal (congenital)	4	..	2	..	6	..	6
	41	40	41	22	82	62	144
Soft Sore	11	..	4	1	15	1	16
Venereal Warts	35	1	1	1	36	2	38
Ulcerative Granuloma	1	..	4	..	5	..	5
	47	1	9	2	56	3	59
	712	249	509	196	1,221	445	1,666
	961		705		1,666		
	1,666						

TABLE XXII

NOTIFIED VENEREAL DISEASES, 1951–52 TO 1966–67

Year	Notifications				Age Distribution—Per Cent.			
	M	F	Total	Rate*	0–14	15–19	20–24	25+
1951–52	526	101	627	50·6	1·9	10·1	23·6	64·4
1952–53	635	122	757	59·5	1·2	9·6	30·9	58·1
1953–54	611	129	740	56·9	1·1	13·3	26·1	50·5
1954–55	572	129	701	52·9	2·1	13·6	25·7	57·6
1955–56	675	132	807	59·7	1·7	14·7	27·7	55·9
1956–57	803	192	995	72·1	1·0	16·6	27·0	55·4
1957–58	855	163	1,018	72·6	1·1	16·2	25·6	58·1
1958–59	757	208	965	67·7	0·8	21·8	25·2	64·1
1959–60	872	149	1,021	70·5	1·0	24·1	28·5	47·3
1960–61	1,230	206	1,436	97·8	1·0	36·2	24·3	39·4
1961–62	1,272	253	1,525	99·8	0·7	35·9	28·3	35·1
1962–63	1,155	318	1,473	96·5	0·7	27·1	33·4	38·8
1963–64	1,038	284	1,322	84·0	1·1	29·0	31·9	38·0
1964–65	1,173	367	1,540	96·5	0·5	28·9	30·5	40·1
1965–66	1,235	417	1,652	101·2	0·7	23·0	34·4	41·9
1966–67	1,221	445	1,666	100·3	1·2	26·1	35·2	37·5

* Per 100,000 mean population

TABLE XXIII

Centres of Notification of Venereal Disease Outside Metropolis

Centre	Males	Females	Total
Allora	2	..	2
Atherton	3	..	3
Ayr	5	2	7
Babinda	3	1	4
Baralaba	5	4	9
Beaudesert	3	..	3
Bowen	7	1	8
Bundaberg	10	6	16
Caboolture	1	..	1
Cairns	44	15	59
Charleville	4	2	6
Charters Towers	5	2	7
Chinchilla	..	1	1
Cloncurry	12	..	12
Collinsville	9	..	9
Coolangatta	1	..	1
Cooroy	1	..	1
Dalby	6	2	8
Dirranbandi	3	1	4
Edmonton	4	..	4
Eidsvold	..	1	1
Gayndah	3	..	3
Gladstone	1	..	1
Goondiwindi	2	..	2
Gordonvale	1	..	1
Gympie	14	6	20
Home Hill	2	..	2
Hughenden	5	1	6
Ingham	4	1	5
Ipswich	8	5	13
Jandowae	2	3	5
Julia Creek	1	..	1
Kallangur	1	..	1
Kilcoy	3	..	3
Kingaroy	2	1	3
Laidley	..	1	1
Longreach	1	..	1
Mackay	28	4	32
Mareeba	1	..	1
Maryborough	8	2	10
Mossman	13	3	16
Mount Isa	11	1	12
Murgon	11	10	21
Nambour	1	1	2
Proserpine	1	..	1
Redcliffe	1	1	2
Rockhampton	15	..	15
Sarina	1	2	3
Southport	20	..	20
Surfers Paradise	4	..	4
St. George	3	3	6
Thursday Island	102	90	192
Toowoomba	23	3	26
Townsville	76	17	93
Tully	4	2	6
Warwick	5	1	6
Wondai	2	..	2
Woody Point	1	..	1
Totals	509	196	705

TABLE XXIV

Alleged Sources of Infection

Non-professional	1,250
Unknown	249
Professional	103
Husband	33
Wife	22
Mother	9
Total	1,666

TABLE XXV

Marital Status of Patients

—	Males	Females	Total
Single	1,012	285	1,297
Married	169	121	290
Separated	27	20	47
Widowed	3	7	10
Divorced	2	10	12
Not Stated	8	2	10
Totals	1,221	445	1,666

TABLE XXVI

Showing Age Group of Notified Cases

Age Group	Males	Females	Total
Under 1 year	6	2	8
1– 4 years	..	2	2
5– 9 years	..	..	..
10–14 years	4	5	9
15–19 years	264	163	427
20–24 years	437	139	576
25–29 years	224	47	271
30–34 years	104	35	139
35–39 years	56	18	74
40–44 years	47	13	60
45–49 years	16	4	20
50–54 years	18	6	24
55–59 years	8	1	9
60–64 years	7	4	11
65 years and over	3	3	6
Not Stated	27	3	30
Totals	1,221	445	1,666

TABLE XXVII

Showing Sources of Notification

—	Males	Females	Total
Private Doctors—			
Brisbane	57	18	75
Outside Centres ..	254	53	307
Totals	311	71	382
Clinics—			
Brisbane	572	180	752
Outside Centres ..	45	19	64
Totals	617	199	816
Hospitals—			
Brisbane	83	51	134
Outside Centres ..	210	124	334
Totals	293	175	468
Totals All Sources	1,221	445	1,666
	1,666		

SECTION OF DRUGS AND POISONS

The law implemented by this section consists of the drugs and poisons sections of the Health Acts, the drug provisions of the Food and Drug Regulations, the Poisons Regulations, the Dangerous Substances Regulations, the Health (Insecticide) Regulations, and the Dispensary Regulations.

The policing of these regulations has involved continual inspections and investigations at all avenues of poison and drug dealings and distribution. Close attention has been paid to these aspects at wholesalers, at the premises of licensed dealers in poisons and at pharmacies, as well as public and private hospitals and other institutions. Generally, it was found that most persons authorised or licensed to have transactions in drugs and poisons are prepared to comply with the law but it was found necessary to take positive action with a few deliberate or persistent offenders. One poisons dealer was prosecuted on two charges of being in possession of restricted drugs without authority and on two charges of failing to keep records of his transactions in poisons. Eight chemists were successfully proceeded against in regard to twenty-four offences in connection with dangerous drugs. These offences included failure to keep faithful records of transactions in dangerous drugs and failure to forward dangerous drug prescriptions on cancellation to the Director-General, as required by law. The effectiveness of control of dangerous drugs depends largely on the keeping of records by all persons having transactions in these drugs. All offences are viewed seriously. In the above cases, fines and costs of court totalling $359.00 were imposed by magistrates. In addition to these prosecutions, minor offenders received severe warnings with salutary effect.

Officers have also carried out special investigations into suspected offences by members of the public relating to dangerous and restricted drugs. In this regard, the assistance of the Police Department is appreciated.

The drug problem is one of the utmost concern to authorities throughout the world and it was considered essential that more positive steps should be taken to prevent any major drug problem arising in Queensland. The Health Acts already gave police officers powers of detention, search, and arrest of persons in possession or suspected of being in possession of dangerous drugs. The Health Acts were amended to extend these powers to other drugs declared by Order in Council to be dangerous drugs for the purposes of sections 130 and 131A. At the same time penalties for offences were increased. Drugs so declared include drugs of the amphetamine group (the so-called "pep" drugs) as well as lysergic acid diethylamide (L.S.D.) and other hallucinogenic drugs. Police officers have been quite active in the exercise of these extended powers and the numerous successful prosecutions launched by them will undoubtedly have a salutary effect on the unauthorised use of such drugs, particularly by transport drivers.

It was also felt that stricter requirements were necessary in dealings in these drugs by persons authorised to have transactions in them, and it was decided that the law already existing in regard to the safe storage of, recording and accounting for transactions in dangerous drugs be extended to declared drugs. This has necessitated major changes in the Poisons Regulations and opportunity has been taken to revise these Regulations and bring them up to date. New drugs and poisons come on to the market in a steady flow and opportunity was taken to bring all the poisons schedules up to date. It is anticipated that the new Poisons Regulations will give greater control over the use and abuse of habit-forming drugs.

Processing and evaluation of cancelled dangerous drug prescriptions have been continued. This work is particularly valuable in that it not only enables this Department to be aware of the extent of the use of dangerous drugs in the State but also aids the staff materially in detecting any malpractices. In addition, it provides a means by which this Department can submit the required annual report for the World Health Organization on the numbers of addicts to dangerous drugs and the numbers of persons legitimately on dangerous drug therapy for lengthy periods.

Sampling of proprietary medicines and other items of therapeutic or cosmetic use was carried out and appropriate action taken on any breaches detected. Assistance has been given to hospitals, institutions, professional men, traders and members of the public in the destruction of surplus and deteriorated drugs and poisons. Close liaison was maintained with the Department of Customs and Excise in regard to confiscated cigarettes, tobacco, and cigars. As a result of these activities, 57,640 cigarettes, 54 lbs. of tobacco and 955 cigars were found to be unfit for smoking and were destroyed.

Sampling activities resulted in the submission of over 800 samples to the Government Chemical Laboratory and the Laboratory of Microbiology and Pathology in whose reports will be found further details. These samples included patent medicines, such as pills, ointment, nerve tonics, laxatives, hair creams, hair dyes, and other hair preparations, face creams, baby oils and powders, disinfectants, antiseptics, deodorants, cleansers, and insecticides.

Attention was given to the proper packing and labelling of drugs and poisons. In this connection it is pleasing to note the co-operation which exists between the trade and this section. Before a new product is placed on the market it is the usual practice for the agent to seek the advice of the Department.

Work has proceeded in the implementation of the Dangerous Substances Regulations and, again, it is noted that the traders continue their co-operation. This is particularly evident with local packers and it is considered that the purpose of the regulations which is the protection of children against accidental poisoning with hazardous substances in common domestic use is being steadily achieved. Action has also been taken to see the requirements of the Health (Insecticide) Regulations and the Dispensary Regulations are being observed.

The Senior Health Officer and Chief Inspector attended conferences in Canberra on the control of narcotics and therapeutic substances. The Chief Inspector attended the meetings of the Uniform Poisons Schedules Sub-Committee of the National Health and Medical Research Council. It is encouraging to report that the degree of uniformity between the States has steadily increased.

SECTION OF FOOD SUPERVISION

This Section is responsible for the implementation of the powers on foods contained in the Health Acts, and the procedures set out in The Food and Drug Regulations, The Health (Food Supply) Regulations, and The Milksellers Regulations. It also acts in a supervisory and advisory capacity in the implementation of The Cafe Regulations, The Health (Food Hygiene) Regulations by the various Local Authorities throughout Queensland, and the distribution of milk in schools.

The duties involved include the promulgation of food standards, the sampling of foods to ensure compliance with the prescribed standards and labelling requirements, prosecution of offenders, inspections at all levels of food manufacture, processing, distribution and sale, and, generally any activities calculated to improve the quality and hygienic standards of foods.

Milk and Milk Products

Pasteurised milk and heat-treated bottled milk constitute the bulk of milk consumed in the State, and the vendor of raw milk is becoming a rarity in all major centres of population.

All phases of milk treatment and distribution have been strictly supervised, and regular sampling of all types of milk in the course of delivery to consumers has been maintained. Details of the samples obtained for bacteriological and chemical analysis may be found in the reports of the Laboratory of Microbiology and Pathology and the Government Chemical Laboratory respectively.

During the year, every milk treatment plant in the State was subjected to detailed inspection, as distinct from normal routine visits, and requisitions for improvements were issued in all instances where defects were observed. As a result of this concerted action, major repairs and alterations, in some instances extending to rebuilding, have been effected or placed in hand, and the various plants are in a very satisfactory condition throughout or are in the course of becoming so.

While the quality of milk has been maintained at a safe level, results of bacteriological examinations of pasteurised milk from some major country centres indicate a lack of consistency which, in view of the standard of plant provided, can only be attributed to defective quality control and flaws in factory hygiene.

As is usually the case, the chief cause of complaint from the public was the incidence of dirty bottles, or bottles containing foreign objects. All of these were investigated and appropriate action taken to eliminate any obvious or potential sources of introduction. When it is remembered that millions of bottles of milk are produced each year, it must be conceded that the proportion of dirty or faulty bottles reported is extremely small, but this affords no consolation to the person who receives one. The various producers have been made well aware of their responsibilities in this direction, and are co-operating fully in keeping to a minimum a problem which is world-wide.

On one occasion during the year, spontaneous complaints were received from several Brisbane suburbs concerning a chemical taint in pasteurised milk. Investigation disclosed that the contamination was due to the use of milking machine rubbers washed in phenolic disinfectant at the farm of a large supplier—the subsequent bulking with other milk introduction the taint to a considerable portion of the factory's output. The prompt action of the management in tracing the cause of the incident and withdrawing large quantities of bottled milk already in the course of distribution is to be commended.

Ultra heat-treated milk, commonly known as UHT milk, and possessing a keeping quality of at least several months without refrigeration, has appeared on the Australian scene, and the first plant for its production in this State is currently under construction. Its probable impact on the industry and the public is not clear at this stage. Economically it is doubtful if it will have any immediate appeal over pasteurised milk in the major centres, but it could open a new era in isolated parts of the State, and perhaps in the export field.

Regular surveys of ice cream and related products have indicated that the standards are being observed in spite of the severe price war which has developed in this field.

Four persons were convicted and fined a total of $87.00 with $26.80 costs for selling milk adulterated with water, and one prosecution for sale of milk deficient in milk fat resulted in a fine of $20.00 with $6.70 costs.

Minced Meat, Sausages

The position with regard to the use of the preservative substance, sulphur dioxide, in minced meat remains much the same as in previous years. It would appear that butchers are prepared to risk heavy fines rather than discontinue this practice. Thirty-four (34) butchers were convicted and fined a total of $757.50 with $246.70 costs for selling minced meat adulterated in this manner. In the case of sausage meat and sausages, where the use of sulphur dioxide up to 3·5 grains per pound is permitted, it was found necessary to proceed against fourteen (14) butchers for using excessive amounts. Total fines of $415.00 with $103.86 costs were imposed. It is high time that this section of the meat trade abandoned its use of excess preservative, and realised that there are better and safer ways of keeping meat fresh.

Bread and Flour

Particular attention was again given to the quality of bread throughout the State. Many samples secured in the survey indicated that a fair average quality was maintained. Details of the samples are included in the report of the Government Chemical Laboratory. Corrective action was taken in all instances where defects or deficiencies were disclosed.

Regular examination of the various types of flour manufactured in the State indicated a generally satisfactory compliance with the standards.

Hotels, Liquor Testing and Glasswashing

Officers have continued their inspections of food preparation and service at hotels and other licensed premises to ensure compliance with the requirements of The Food and Drug Regulations, and numerous minor defects have been rectified as a result of notices issued. Any major deficiencies requiring structural alteration have been referred to the Licensing Commission for consideration.

Testing of spirits on sale in hotel bars, a routine duty extending throughout the State, resulted in the conviction of two persons for the sale of spirits adulterated with water, total fines of $40 with $33.40 costs being imposed, while one person was convicted and fined $10.00 with $2.50 costs for selling rum containing vinegar flies. The practice of adulterating liquor is much less prevalent than in the past.

One person was convicted and fined $7.50 with $2.50 costs for failing to denature waste beer.

Sixteen (16) persons, either hotel licensees or their employees, were convicted and fined a total of $247.50 with $40.00 costs for breaches of the legislation requiring a clean glass to be served with each drink.

Soft Drinks, Cordials

Continued checking of samples from all parts of the State revealed no major breaches of the prescribed standards, and no prosecutions were undertaken. Main faults were slight excesses of permitted preservatives and minor labelling defects. Appropriate action was taken in all such instances.

Fish

The two officers engaged in full-time inspection duty at the Brisbane Fish Markets and retail outlets in the Metropolitan area condemned and destroyed a total of 83 tons 7 cwt. 3 qrs. 22 lb. of unsound fish and marine products and 912 crabs. District officers destroyed a further 1 ton 8 cwt. 0 qrs. 23 lb. of fish at various coastal depots.

The incidence of high bacterial counts in imported cooked peeled prawns and their contamination with pathogenic organisms, gave rise to concern as the bulk of this product is used either without further cooking or with little heating in the preparation of seafood dishes at hotels and other public eating places. Queensland, with its own large prawning industry, was affected to a lesser extent than some other States, but participated in emergent action which resulted in drawing up an interim bacteriological standard to be implemented by all States pending individual legislation. With the co-operation of importers and local processors, this unofficial standard has had the desired effect, and the position is now considerably improved. No prawns are being distributed for sale unless they are certified as complying with the standard. A uniform standard recommended for adoption by all States has since been approved by the National Health and Medical Research Council, and will soon be incorporated in State legislation.

Complaints concerning a kerosene-like taint in mullet taken in estuary and bay waters around Brisbane were investigated, but the causative factor has not yet been determined. The condition, unlike the "earthy" taint sometimes encountered, is evident only on cooking, and could become a major problem to the industry.

Unsound Food

Inspection of food at all points of distribution and sale resulted in a total of 41 tons of assorted foods being certified as unfit for human consumption. These foods, the majority of which were damaged by fire, floods, or in transit, were destroyed under Departmental supervision.

Edible Oils

Butter and margarine samples examined were found to comply generally with their prescribed standards. A survey of vegetable oils, for which there appears to be an increasing market, disclosed some labelling defects and indications of faulty description in some cases. The data secured from the survey of all these oils will be of value in determining their correct classification in future examinations.

Showgrounds, Racecourses

The campaign for the improvement of food stalls and liquor booths at showgrounds and racecourses was continued, and negotiations with the various Societies and Clubs have produced numerous improvements. Finance is a limiting factor in many instances, particularly in smaller centres, and rebuilding and renovation in these circumstances must necessarily be spread over a period of years to avoid hardship.

All major shows and race meetings and many such country functions were supervised to ensure safe and hygienic food handling facilities.

Food Sampling

In addition to the numerous legal samples secured in the course of policing food standards, some 2,210 samples of foods were submitted for unofficial chemical analysis in connection with routine surveys or to determine compliance with labelling requirements, suitability for human consumption, and general composition, while 534 unofficial samples were submitted for bacteriological examination for quality control purposes.

Details of all sampling, legal and unofficial are supplied in the reports of the Government Chemical Laboratory, and the Laboratory of Microbiology and Pathology.

Local Authority Supervision

Under the provisions of The Cafe Regulations and The Health (Food Hygiene) Regulations, the safe and hygienic distribution of food at retail level is the responsibility of Local Authorities throughout the State. The importance of this phase of food distribution cannot be over-emphasised, particularly in view of the current trend towards communal eating, and it is imperative that all such establishments should be above criticism. Reports of inspectors indicate that while the standard at retail food premises varies from good to reasonable in most cases, there is still room for improvement in a few instances.

Conferences

The Chief Inspector of Foods attended two meetings of the Food Standards Committee of the National Health and Medical Research Council, and progress has been maintained in the formulation of uniform food standards for adoption by all States of the Commonwealth.

SECTION OF ENVIRONMENTAL SANITATION

DISTRIBUTION OF HEALTH INSPECTORS

At 30th June, 1967, one hundred and seventy-one (171) health inspectors, an increase of seven on last year's figures, were employed by Local Authorities throughout the State. While it is pleasing to note this increase, which proportionately increases the potential for providing better standards of environmental health, there is still cause for concern that too many people throughout the State are denied the advantages of regular personal contact with a health inspector.

Health inspection can never attain maximum efficiency until there are enough inspectors for each of them to devote more time to improving the public relationships which he can establish by giving the residents of his area more opportunities to discuss health matters with him. In too many areas the inspector's job is regarded solely as a policing one. He is often regarded as a barrier between the Council and the non-conformist who sees fit to ignore health laws, rather than as an advisor to the residents of the area. As a result, his full potential may not be realised.

COLLECTION AND DISPOSAL OF ORGANIC WASTES

Sewerage

The year has been marked by a notable change of attitude towards sewerage installations. High costs, which in the past have caused many local authorities to defer sewerage installations, no longer appear to be regarded as the most significant factor affecting a decision for or against sewerage. The rate of residential development in many areas is so prolific that the difficulties associated with the removal and disposal of nightsoil, and the elimination of the offensive odours from defective drainage methods, present problems of such magnitude to a Local Authority that sewerage provides the only effective answer.

As a result, a sudden realization appears to have developed where Local Authorities are now pressing for recognition of their particular problems in this respect and are vying with one another for the limited loan monies available for sewerage. This display of eagerness to instal sewerage portends a rapid advancement in this field, and thereby an equivalent improvement in the general standard of sanitation in several areas. It is regrettable that funds available are insufficient to meet this new demand, as there is no single amenity having as important a bearing on the standard of community health and comfort as sewerage.

Pan System

The pan system of collecting nightsoil for disposal still remains the most common system practised in this State. The methods by which it must be effected, and the method of disposal of the collected nightsoil, are uniform throughout the State. They are defined in "The Sanitary Conveniences and Nightsoil Disposal Regulations of 1957", and this uniformity assists in establishing a satisfactory standard which is closely supervised by both Local Authority and Departmental inspectors. Because of the health hazards related to the system, particularly in respect of fly-borne disease, it is imperative that the intensive surveillance applied to the system in past years should be continued.

It is regrettable that one Western township with a population of nearly 300 residents continues to use primitive cesspits for nightsoil disposal, but fortunately this is an exception to the reasonable standard practised throughout the State.

Refuse Collection and Disposal

There was noticeable room for improvement in the methods adopted by some Local Authorities for the disposal of refuse, and on several occasions it was found necessary to point out that their system of periodic covering of refuse was inadequate and did not meet the standards required by this Department.

Disposal at tips should be not more than 8-9 feet in depth, with immediate coverage, without burning, on the day of disposal. These methods have been found to be satisfactory for fly-breeding control. Several Local Authorities do not now follow this recommended system.

WATER SUPPLIES

A study of the number of bacteriological drinking water samples submitted to the Department for examination is interesting. 734 samples were submitted in 1964-65, but this figure jumped to 1,597 in 1965-66, and a further increase to 1,986 is reported for the year under review.

The Department constantly stresses the danger of presuming that a water is bacteriologically satisfactory after a single report. This assumption is true only of the particular sample examined. It is possible that pollution may have since entered the tested supply between the time of sampling and the time of discussion of the laboratory report at the subsequent Council meeting. For this reason, Local Authorities are now encouraged to submit more regular samples of their reticulated water supplies for examination.

It is pertinent to this subject to recall that no fewer than 84 townships in Queensland have reticulated water supplies which are not treated in any way.

RIVER AND STREAM POLLUTION

Close liaison was maintained with the Department of Local Government on the pollution of rivers and streams throughout the State, with particular reference to pollution due to sugar mill wastes.

The many problems associated with pollution have led to the formation of a special committee under the control of the Co-ordinator-General of works, with representation from several Government Departments, whose purpose is to investigate various aspects of river and stream pollution in Queensland.

TOURIST RESORT—BACILLARY DYSENTERY

In November last, a bacillary dysentery outbreak of a mild nature at a tourist resort gave cause for concern because of the number of tourists being affected by it. The nature of the resort, with new susceptible hosts constantly arriving in batches, presented many difficulties and it was some time before the spread of infection was adequately checked.

SWIMMING POOLS

Extensive surveys, not yet completed, were commenced during the year into the effective disinfection and treatment of swimming pools. The surveys cover the effect of the stabilizer cyanuric acid on the bactericidal qualities of chlorine and the effectiveness of a new sterilizing agent, benzylkonium chloride. These surveys will be continued during the 1967-68 swimming season.

TOYS

Particular attention was paid during the year to the sale of toys painted with paints containing lead, and detailed inspections of toy stocks were made in both the metropolitan and country areas. A line of toy pianos and several lines of toy cosmetic sets containing a mirror backed with lead paint were withdrawn in large numbers from sale throughout the State.

The campaign to free the State of the hazard of lead toys has progressed in a most satisfactory way. A good deal of the credit for this must go to the retailers of the State and to their association—The Retailers Association of Queensland. The toy distributors have extended co-operation and assistance to the Department's efforts.

LEAD PAINT

Policing the law which prohibits the application of lead paint to dwellings, either internally or externally, or to furniture, was continued during the year, although its extent was limited because of staff shortage.

THURSDAY ISLAND

Particular attention was paid during the year to the standard of sanitation at Thursday Island, which in the past has given rise to some concern. In respect of rat and mosquito infestation, drainage nuisances, basic sanitation and general cleanliness, conditions on the Island fall a good deal short of accepted standards. This situation can have far-reaching consequences when it is related to the location of the Island in respect of Asian people in the near North who usually have a high incidence of tropical diseases, some of which could spread to this State.

CAMPING FACILITIES

A somewhat explosive increase in the popularity of caravan and camping holidays has brought some problems for Local Authorities which are responsible for the supervision of camping sites.

Some Councils unfortunately have refused to restrict the number of camps on their reserves and as a result their facilities are grossly overtaxed during peak holiday periods. This is a difficult problem, not easy to overcome because of the cost of additional facilities for a few weeks every year. The return from camping fees should be applied to this purpose.

RODENT CONTROL

During the year, Local Authorities along the coastal belt were circularised about the need to maintain constant vigilance over rodent infestation in areas of high density living. If the rat population is unchecked, introduced plague could spread rapidly.

Table XXVIII shows the number of rodents destroyed by Local Authorities during 1966-67.

TABLE XXVIII

City	Rats	Mice
Brisbane	29,174	4,204
Bundaberg	332	..
Cairns	864	644
Gympie	137	..
Ipswich	264	..
Mackay	1,049	650
Maryborough	211	..
Rockhampton	1,097	..
Townsville	181	..
Totals	33,309	5,498
Total all rodents 1964–65		52,332
Total all rodents 1965–66		46,555
Total all rodents 1966-67		38,807

HOOKWORM CONTROL CAMPAIGN

The staff consists of two health inspectors with headquarters at Cairns. Officers carry out microscopic surveys and hookworm treatments, together with sanitation inspections throughout the area between Ingham and the Torres Strait Islands.

During the year under review, surveys were extended to the Local Authority areas of Cairns City, Burke, Cardwell, Carpentaria, Douglas, Herberton, Hinchinbrook, Johnstone, Mareeba and Mulgrave.

Settlements under the control of the Department of Aboriginal and Island Affairs surveyed were Cape York Settlements, Badu Island, Mabuiag Island, Kubin Village on Moa Island as well as the Aboriginal Reserves at Chillagoe, Burketown, Herberton, Mareeba, Mossman, Mount Garnet, Normanton, Ravenshoe and Lyons Street Hostel in Cairns. Additional health inspectors will be appointed to improve environmental sanitation in Aboriginal and Torres Strait Settlements and missions.

The following missions under the control of religious denominations were visited:—Edward River, Mitchell River, Mornington Island on the mainland and St. Paul's on Moa Island in Torres Strait.

During the past twelve months a total of 3,687 faecal specimens were examined. 3,309, of which 266 (8·0 per cent.) were positive for hookworm, were from Aborigines or Torres Strait Islanders—an increase of 3·3 per cent. over last year. The increase is due mainly to the high incidence at Badu Island where 34·9 per cent. of the population of 306 were found infected. The remaining 378 faecal specimens were submitted by Europeans. Of these 43 (11·3 per cent.) were found to be positive for hookworm.

The extent of hookworm infestation in the age groups examined is shown in the following table:—

——	Number Examined	Number Positive	Percentage Positive
Pre-School	660	34	5·1
School	1,369	131	9·5
Adult	1,658	144	8·6

Forty-three positives were found among 107 specimens forwarded from Mirani Shire following notification of a Hookworm patient in that area. Notification of all positives was forwarded direct to the Mirani Shire Council which arranged to treat patients with "Alcopar" supplied from this office. Re-examination of treated positives proved disappointing, with some patients submitting up to six faecal specimens before a negative result was gained.

Sanitation inspections were also carried out in each area visited, and superintendents were given advice for the improvement of environmental and personal hygiene. Reports were forwarded to the various authorities so that necessary remedial action could be taken.

It is heartening to find that all settlements, communities, and islands visited during the past year now have water supplies. It is felt that this amenity fills a big need in the promotion of personal hygiene, and the Department of Aboriginal and Island Affairs and the religious bodies under which these communities are functioning are to be commended. It is hoped, however, that in the near future, these water supply schemes will be extended with water fully treated and chlorinated.

Health education in communities and settlements continues to be stressed through personal contact, addresses to groups and to schools, the screening of health films and the use of literature from the Queensland Health Education Council. This helps understanding of spread of parasite diseases.

Both soil and stagnant water samples were collected from Cape York Peninsula and the various Islands visited in the Torres Strait, and forwarded to the Laboratory of Microbiology and Pathology relative to investigations into the incidence of melioidosis in that area.

Both inspectors continue to co-operate with the District Inspector, Sub-Office, Cairns, and carry out general food hygiene and sanitation inspections in outlying districts where possible and at his request.

Both officers also visted Yarrabah Aboriginal Settlement to assist in the administration of a mass treatment for Amoebiasis under the direction of the Health Officer (Dr. Gabriel).

DIVISION OF AIR POLLUTION CONTROL

Director of Air Pollution Control: ALAN GILPIN, B.Sc. (Econ.), M.I.P.H.E., M.Inst.F.

The administration of *"The Clean Air Act of* 1963" is the responsibility of the Minister for Health and, subject to the Minister, the Air Pollution Council of Queensland. The Council comprises ten members drawn from widely contrasting backgrounds of experience. The purpose of this breadth of representation is to bring experienced minds to bear on a problem which in itself has many facets of a social, economic and technical nature. At the close of the year membership of the Council consistcd of the following:—

(1) Dr. D. W. Johnson (Chairman), Deputy Director-General of Health and Medical Services, State Department of Health.
(2) Dr. M. H. Gabriel, Health Officer, State Department of Health.
(3) Professor Mansergh Shaw, Head, Department of Mechanical Engineering, University of Queensland.
(4) Professor R. G. H. Prince, Head, Department of Chemical Engineering, University of Queensland.
(5) Mr. L. R. Thornton, Chief Engineer, State Electricity Commission.
(6) Mr. W. A. Castley, Chief Mechanical Engineer and Superintendent, Ipswich Railway Workshops.
(7) Mr. S. L. Graham, Queensland Manager, Unilever Aust. Pty. Ltd.
(8) Mr. H. N. Jacobs, Deputy Director, Department of Local Government, Brisbane.
(9) Mr. L. J. Jones, General Manager, Queensland Cement & Lime Co. Ltd.
(10) Mr. E. Williams, Branch Secretary, Australian Workers' Union.

The Director of Air Pollution Control is the chief administrative officer for the purposes of the Act and is responsible to the Minister and the Council accordingly.

The Air Pollution Council and its technical committee, elected to examine draft Clean Air Regulations, met on several occasions during the year. Among other matters discussed the Council received from the Director a Memorandum on the Siting of Scheduled Industry in relation to Air Pollution Control; copies of this Memorandum have now been sent to those local authorities in Queensland likely to be affected by air pollution from secondary industry.

Clean Air Regulations

The Clean Air Act, now in force in Brisbane and Ipswich, provides for the making of Regulations for the purpose of furthering the general aims of the Act. The preparation of draft Regulations, governing the licensing of scheduled industries and chimney emission standards, has probably been the Director's most important contribution during his first two years in Queensland. The drafting took account, in relation to Queensland's conditions, of the standards adopted in other Australian States and in many other countries. With the approval of the Minister and the Council, the Director undertook a series of meetings with various branches of Queensland industry, the Chamber of Manufactures and the Brisbane Chamber of Commerce, to hear and discuss in advance any special difficulties which any section of industry felt it may encounter in trying to meet the proposed standards. The views of industry will be carefully considered by the Air Pollution Council before making a final recommendation to the Minister. The discussions with industry and with other Government Departments were concluded by the end of the year.

Assessment of the Air Pollution Problem

The Director has continued his task of familiarising himself with the air pollution problems of Queensland, both present and prospective. While air pollution is an almost universal problem, nevertheless each area and locality presents unique characteristics. To appraise these is no easy task. For example, Brisbane presents a problem of topography (hills and valleys) and frequent winter temperature inversions in the atmosphere. These occur when the temperature of the atmosphere increases instead of falling with height. This has the effect of inhibiting the upward diffusion of gases and prevents pollution getting away into the upper atmosphere. Thus the Brisbane hills and the inversions combine at times to prevent both sideways and upwards dispersal of pollution, thus trapping the pollution in and over Brisbane for long periods. Furthermore the air pollution problem in Brisbane is likely to be aggravated by the development of industry of the City in a south-west-northeast direction, which is in line with the prevailing winds. There are resemblances with the Los Angeles situation not only in respect of topography and inversions but also in respect of abundant bright sunlight, which in Los Angeles reacts with motor vehicle emissions to form a rather special brand of "photochemical" smog. Thus there can be no doubt that Brisbane, because of its location and topography, has a climate which could lead to the worst air pollution of probably any ~~other~~ capital city in Australia, if the emission rates of pollutants became high and were not adequately controlled. That is, Brisbane has a high pollution potential. To assist a more detailed assessment of the position in Brisbane, and in other cities and towns in Queensland, more climatological data is needed and the Bureau of Meteorology is co-operating with the Air Pollution Council in this matter. The Director is a member of the Queensland Climatological Consultative Committee. In addition, detailed surveys of the existing levels of pollution at different times of day and at different seasons of the year need to be carried out by the Division of Air Pollution Control. This work can be undertaken when laboratory facilities and scientific staff become available.

Advice to Industry

The Director has also continued giving, on request, advice to industry on the best practicable means of achieving the standards of performance clearly envisaged by the Act. This is an important function for the Division. It is clearly not sufficient to say to a firm, irrespective of its size or resources, that certain standards are to be achieved without being prepared to discuss the best and most economical means of achieving those standards.

Lectures

Lecturing on a modest scale can be a valuable aid to fostering discussion and thought on this important problem. During the year the following lectures were undertaken:—

(*a*) Royal Society of Queensland—a symposium in which the Regional Director of the Meteorological Bureau (Mr. A. J. Shields) and the Chairman of the Air Pollution Council (Dr. D. W. Johnson) participated.
(*b*) University of Queensland—a short course of lectures to students in the Department of Chemical Engineering. The implication of this course is that graduates in Chemical Engineering will emerge who have the benefit of a basic introduction to the problem of air pollution control.
(*c*) Ampol Refinery—a talk to supervisory staff. This invitation from Ampol was very much appreciated and is perhaps a symptom of the seriousness with which industry generally is beginning to view this subject.

Technical Conference

The Fifth Technical Conference on Clean Air was held in Brisbane on 1st and 2nd June, 1967. These Conferences are held annually to enable technical officers actually engaged in air pollution control work, from all the Australian States and New Zealand, to meet and discuss common problems. The first conference was held in Sydney in 1963. Last year it was held in Melbourne.

These conferences came into being as a result of a decision by the Annual Conference of State Health Ministers in Adelaide in 1962. The subjects discussed include monitoring techniques, field measurements, the effects of air pollution, and the control of air pollution. The topics discussed at the Brisbane Conference included the mathematics of chimney heights, the analysis of oxides of nitrogen, motor vehicle exhausts, legislation, nitric acid plant, fertiliser works, galvanising, and incinerator design to mention but a few.

Delegates placed on record their belief in the invaluable nature of these annual meetings to their work in their respective States and expressed their warmest appreciation of the arrangements made in Queensland.

Staff

The professional staff of the Division comprises the Director who has the assistance of a clerk/typist. There is yet no other staff. It is hoped to fill the vacant post of Air Pollution Control Engineer before long and a suitable person is being sought.

Office and Laboratory Accommodation

Some progress has been made during the year in the conversion of the old Seaman's Institute in Macrossan Street, part of which will be available for this Division.

DIVISION OF TUBERCULOSIS

Director: E. W. Abrahams, M.D. (Melb.), M.R.C.P. (Lond.)

Assistant Director: Cyril Evans, M.B., B.S., D.T.M., M.R.C.P. (Lond.)

Chest Physician, Toowoomba: Edward Robinson, M.B., Ch.B., D.P.T., T.D.D.

Chest Physician, Cairns: R. J. B. Anderson, M.B., Ch.B., T.D.D. (Wales)

Chest Physician, Rockhampton: P. A. M. Dale Lace, M.B., Ch.B.

Chest Physician, Townsville: John E. Thompson, M.B., B.S., M.R.A.C.P.

STAFF

The death of Dr. John Clarke, Chest Physician, Thoracic Annexe, Townsville, is recorded with regret. Dr. Clarke was travelling on duty west of Townsville when he died as the result of a traffic accident.

Dr. Edward Robinson has taken up duty at the Thoracic Annexe, Toowoomba, and Dr. John Thompson at the Thoracic Annexe, Townsville. Dr. George Burgess has resigned from the staff of the Chest Clinic, Brisbane, and has been replaced by Dr. Glenda Powell.

Miss Joan Marsden, one of our senior sisters, was granted leave to attend a course in public health nursing in Melbourne, arranged by the Australian College of Nursing.

GENERAL

(Tables XXIX, XXX, XXXI, XXXII, XXXIII)

Notifications for the year were 563, a further drop of 60 in 1965-66 and of 330 since 1964-65. The marked drop over the past two years is most encouraging. As will be seen in Table XXXIII the number of new cases had remained at approximately the same level prior to 1964-65. In last year's report it was stated "if the drop is sustained in the forthcoming year it must be accepted as genuine and indicating the first signs of success in our control efforts". As the drop has not only been maintained but has further increased this conclusion can be reiterated. Cases notified as a direct result of mass radiography this financial year were 105 (Table XXIX) and compare with 128 last year and 325 the previous year. The drop in notifications has continued despite the maintaining of the case-finding activity at its previous level. In the future fewer cases can be expected to be found by mass radiography. The incidence of cases in the older age group, particularly in males, is noteworthy. These cases occur not as a result of recent infection but as the breakdown of infection sustained perhaps many years before. Any further reduction in these numbers will be slow.

During March this year the Commonwealth Department of Health arranged a conference of medical officers from the various tuberculosis services in the States. The objective of this conference was to improve communications between the medical men actually carrying out the policies of the various Health Departments in respect of tuberculosis. A most successful and stimulating meeting resulted. The Queensland representatives, Dr. David Harland from the Brisbane Clinic and Dr. R. J. B. Anderson from Cairns, read papers on problems of major importance in Queensland. These were "Simultaneous testing with human and avian tuberculin" by Dr. Harland, and "The Control of tuberculosis in a tropical area" by Dr. Anderson.

TREATMENT

The treatment of pulmonary tuberculosis over the past ten years has become stabilised to a remarkable degree throughout the western world. In most clinics new patients commence treatment with Streptomycin, Para-amino salicylic acid and Isoniazid, continue with this treatment for three to four months, then stop the Streptomycin and continue with the other two drugs for a period of approximately two years. On this regime failures of treatment are few provided—

(i) That patients take drugs as ordered;

(ii) That the organisms causing illness in the patient are sensitive to the drugs given; and

(iii) That toxic or allergic side effects of the drugs do not interfere with the planned programme of drug taking.

It seems that there is little call for new drugs under these circumstances. However, as mentioned in a previous report (1964-65) up to 30 per cent. of patients in Brisbane experience difficulties with toxic and allergic effects resulting in interruption of treatment: Therefore the search continues for compounds with anti-tuberculous activity and fewer side effects. An impressive list of drugs is available when treatment with the three (first line) drugs mentioned needs to be varied. All, however, have side effects in their turn, and an occasional patient who has the misfortune to react adversely to many drugs, experiences great difficulty in obtaining adequate drug treatment for long enough to control his disease.

Trials of new drugs are increasingly difficult to arrange as only patients who have failed to respond to established drugs are ethically available for treatment with these new compounds. During the past eighteen months a small number of cases have had treatment with two such drugs—Capreomycin, an injected drug, and Ethambutol (Myambutol) which is taken orally. A majority of the patients treated have been infected with atypical mycobacteria (which are, in general, unresponsive to drug treatment). Some have had ordinary *M. tuberculosis* infection and have had a good response to treatment with few side effects presenting. So far numbers tested are small and opinion must be guarded concerning the place these two compounds will play in our drug armamentarium.

ATYPICAL MYCOBACTERIA

(Table XXXVI; also Fig. I)

In this field substantial progress can be recorded. The Commonwealth Department of Health has agreed to provide funds for a research project into the ecology of mycobacteria in Queensland. This is subject to our being able to obtain adequate staff for the purpose. It is proposed to establish an epidemiological and bacteriological team, located in the buildings now occupied by the Chest X-ray Centre on Wickham Terrace. The aim of the project is to investigate the clinical and bacteriological factors in respect of the occurrence of mycobacteria in this State. The public health aspects of the problem are to be the focus of interest rather than purely scientific aspects. Initially, search for mycobacteria should be undertaken in normal human beings, in foods, insects, pets and native animals, as well as studying persons with pulmonary abnormalities who are excreting organisms. Geographical factors seem important in the distribution of some of these mycobacteria and a study will be made of the environment of persons from areas of low and high tuberculin hypersensitivity incidence. It is hoped to maintain overseas contacts and to have a sufficiently flexible approach to follow up any promising leads which present. The elucidation of these problems is of importance to the control of tuberculosis in Queensland where, as a result of the occurrence of these mycobacteria, tuberculin tests are less specific than in other parts of Australia and clinical disease due to atypical mycobacteria occurs fairly commonly. An analysis of the record of persons suffering from disease due to atypical mycobacteria is given in Table XXXVI.

A total of 15 cases of tuberculous cervical adenitis have been found in the Brisbane area this year. All those from whom mycobacteria were cultured grew atypical organisms, of Group II and Group III. None were true tubercle bacilli and most patients were girls. The grouping of these cases to constitute a small epidemic has been noticed previously, one small epidemic being reported from Melbourne in 1958-59.

This is not a complete survey of cases occurring throughout the State but only of cases which have come under notice of the Brisbane Chest Clinic and consequently the figures in some categories must be interpreted with caution. For example, northern figures would include many more Aboriginal cases.

The large number of persons in whom atypical mycobacteria follow a diagnosis of true tuberculosis is particularly noteworthy and points to the necessity of clarifying the possibility that atypical mycobacteria are mutants from true virulent tubercle bacilli. The increase of the number of cases with age is also of interest.

A finding of great interest this year is more fully reported by the Director of the Laboratory of Microbiology in his report—namely, the isolation from three patients of organisms with the characteristics of disease due to *M. avium*. This is the first isolation of this organism from human material in Australia. These organisms are extremely close allies of the Battey bacillus—the most common member of the atypical mycobacteria to produce disease in Queensland. *M. avium* is said not to occur in Queensland poultry flocks. As it has been claimed that the two organisms do not occur in the same geographical region the discovery of these three cases is of considerable theoretical importance.

LUNG CANCER

(Tables XXXVII, XXXVIII)

The consultative group from the Chest Clinic, Queensland Radium Institute and a chest surgeon from the Chermside Hospital have continued to meet regularly throughout the year: 147 cases of lung cancer were found in the Chest Clinic practice, 90 by mass radiography. This is by far the greatest number of cases so far found in any one year. The association of this disease with cigarette smoking is now beyond all doubt. Results of treatment are poor, though the survival rate of cases found at mass radiography is better than in those presenting with symptoms. A recent report from Great Britain (Bignall J. R., Martin M. and Smithers D. W., Lancet 1967, I: 1067) points out that "The change in smoking habits that has taken place among doctors would seem to have reduced their mortality from this disease at the same time that it has been rising steeply in the general public.

"Much more effort should go into preventing this disease . . . More subtly persuasive techniques are required. These may cost much money. This cost should be weighed against what may be a greater present outlay in diagnosing and treating with largely inadequate means this mainly preventable disease."

COUNTRY CLINICS

Clinics are held regularly at many country hospitals for the investigation and diagnosis of cases of pulmonary disease and the supervision of patients who have had treatment for tuberculosis or who are thought to have inactive pulmonary disease. The hospitals where clinics are held are—

FROM	Cairns	Atherton, Herberton, Mareeba, Innisfail, Tully.
	Townsville	Charters Towers, Cloncurry, Mount Isa, Proserpine, Ayr, Ingham.
	Rockhampton	Mount Morgan, Mackay, Gladstone, Longreach, Winton, Monto, Mundubbera, Eidsvold, Gayndah.
	Toowoomba	Dalby, Roma, Charleville, Stanthorpe, Warwick.
	Brisbane	Bundaberg, Maryborough, Gympie, Nambour, Ipswich, Southport, Cherbourg Aboriginal Settlement, Kingaroy and Redcliffe.

MASS RADIOGRAPHY

(Tables XXXIX, XL, XLI, XLII)

The remote area X-ray unit has operated successfully in North Queensland. During 1966 the areas covered have included those from Cooktown to Portland Roads and from the Mitchell River Mission through Normanton to Julia Creek. Special effort has been made to visit remote cattle stations and to X-ray the Aborigines on these stations who are most likely to be overlooked in ordinary mass surveys. Except in the Islands and the Gulf missions there has been been only one active case discovered—a most satisfactory result.

The usual city and country area surveys have continued. Public response continues to be most satisfactory. As already mentioned numbers of cases found have shown a most gratifying fall, following the commencement of repeat surveys last year.

Total active cases found by mass radiography over the previous five calendar years were as follows:—96, 190, 280, 345, 185 and (in 1966) 136 (Table XL). The number of cases of active tuberculosis notified during the current financial year as a direct result of the compulsory mass X-ray survey was 105 (Table XXIX). The rise in numbers due to the commencement of the Brisbane survey, and the subsequent decline when only previously surveyed districts are available for X-ray is clearly seen.

At the conclusion of the second round of both country and city surveys consideration must be given to increasing the interval between surveys.

The results from the current survey of the Toowoomba district in which the first round survey showed a low incidence (0·68 per 1,000 films) will be helpful in this regard as the interval between surveys in this district was four years, while the usual interval is approximately three years.

ENFORCEMENT OF COMPULSION

Eight prosecutions were undertaken in 1966 to enforce the attendance of persons for mass X-ray and all were successful. Again, analysis of figures from those who were X-rayed only after reminder notices had been sent (Table XLII) shows the need for strict implementation of the compulsory nature of the surveys.

DOMICILIARY VISITING

During the past few years biochemical tests have become available to determine if patients are taking drugs ordered for them. These have shown that in all communities a distressingly large proportion of patients are not taking drugs as ordered. Despite the serious nature of tuberculosis some quite intelligent patients admit to this only when the failure of treatment makes the physician press them closely to determine the reason for the failure. Under these circumstances, home visiting of patients, particularly during the critical weeks following discharge from hospital, has become even more important.

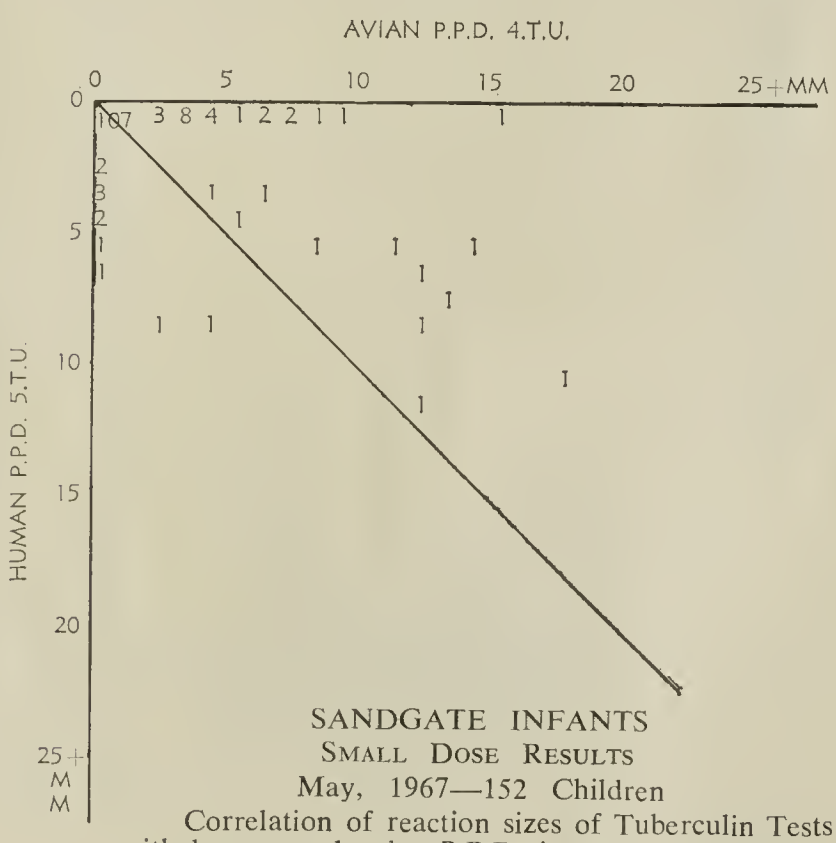
TUBERCULIN TESTING, B.C.G. VACCINATION

(Tables XLIII, XLIV, XLV)

The use of human and avian tuberculin (P.P.D.) supplied by courtesy of the Medical Research Council of Great Britain and the Ministry of Fisheries and Food Central Veterinary Laboratory, Weybridge, for routine tuberculin testing in the clinic to assist in the diagnosis of persons infected with atypical mycobacterium has been a feature of this year's work. In addition, several special surveys of children have been undertaken, and one, at Southport School, has produced unexpected results of great epidemiological interest and theoretical importance. These are published in a paper accepted by 'Tubercle' and supplied the material for the paper presented by Dr. Harland at the conference in Sydney referred to earlier in this report. On the basis of these skin tests with small and large doses of P.P.D. 80 per cent. of the children in this school who had not had B.C.G. vaccination previously had a positive skin reaction to tuberculin prepared from avian tubercle bacilli which are closely related antigenically to the atypical mycobacteria found most commonly in Queensland. Therefore it can be reasonably assumed that the 80 per cent. of children showing a positive tuberculin reaction have had an infection with such atypical organisms of sufficient intensity to cause skin sensitisation. In addition, children who had been vaccinated with B.C.G. previously also showed larger reactions to the avian than to the human P.P.D.—a surprising result because one would expect sensitivity to human P.P.D. after B.C.G. vaccination to be greater. As B.C.G. is given only to non-reactors to a small dose of human P.P.D. it must be presumed that a large proportion of the children with positive avian tuberculin tests after B.C.G. vaccination have also had an infection with atypical mycobacteria. B.C.G. not only gives them a sensitivity to human P.P.D. but also boosts their skin sensitivity to the atypical antigen.

A second survey of pre-school children, done in a kindergarten where a case of tuberculous cervical adenitis due to atypical mycobacteria had occurred among children attending, is reproduced. (Fig. 1.) This shows that even in pre-school children the pattern of larger reactions to avian than to human tuberculin is already established.

FIGURE 1



Correlation of reaction sizes of Tuberculin Tests with human and avian P.P.D. in small doses among Sandgate infants.

The usual programme of tuberculin testing and of B.C.G. vaccination of school children of about 14 years of age has been carried out. (Table XLIII.)

In addition the vaccination of troops and their families posted overseas continues. The significant absence of cases of tuberculosis among these families, despite their being resident in countries of high tuberculosis incidence is noteworthy.

TUBERCULOSIS ALLOWANCES

(Table XLVI)

In keeping with the fall in notifications a further fall in tuberculosis allowances paid has been recorded. The eligibility of Aborigines and Torres Strait Islanders for the allowance since 29th September, 1966 is welcomed, removing as it does one of the few anomalies in this financial aid to tuberculosis patients.

TABLE XXIX

SOURCE OF NOTIFICATIONS OF TUBERCULOSIS FOR YEAR ENDED 30TH JUNE, 1967

Source	Pulmonary Cases		Non-Pulmonary Cases		Total Cases
	Number	Percentage	Number	Percentage	
Mass Community Surveys	105	..	..	..	105
Private Medical Practitioners—					
(*a*) Direct	19	..	3	..	22
(*b*) Via Chest Clinic	8	..	..	..	8
General Hospitals	26	..	13	..	39
Chest Hospitals, Annexes and Sanatoria	195	..	14	..	209
Chest Clinics	130	..	2	..	132
Repatriation Clinics and Hospitals	29	..	1	..	30
Death Certificates	7	..	2	..	9
Special Groups—					
(*a*) Mental Hospital Surveys	8	..	1	..	9
(*b*) Gaol Surveys	..	..	..	..	..
(*c*) Ante-Natal Hospitals	..	..	..	..	..
(*d*) Other	..	..	..	..	..
TOTALS	527	..	36	..	563*
Less—Any transfers-from other states Included Above	15	..	1	..	16
Net Notifications	512	..	35	..	547*

* Includes 1 case of Pulmonary and Non-Pulmonary Tuberculosis.

TABLE XXX

NOTIFICATIONS OF TUBERCULOSIS FOR YEAR ENDED 30TH JUNE, 1967
NEW ACTIVE AND PROBABLY ACTIVE CASES
SHOWING AGE .SEX AND STAGE OF DISEASE

Age Group	Males						Females						Persons						
	Primary	Pleurisy with Effusion	Pulmonary			Non-Pulmonary	Primary	Pleurisy with Effusion	Pulmonary			Non-Pulmonary	Primary	Pleurisy with Effusion	Pulmonary			Non-Pulmonary	Total Persons	Percentage of Each Age Group
			Minimal	Moderately Advanced	Advanced				Minimal	Moderately Advanced	Advanced				Minimal	Moderately Advanced	Advanced			
0–4	2	..	2	..	..	..	2	..	1	..	..	2	4	..	3	..	..	2	9	1·6
5–9	1	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	2	0·4
10–14	..	..	1	..	..	..	..	..	..	1	..	..	..	..	1	1	..	..	2	0·4
15–19	..	..	2	2	..	..	..	..	..	1	..	..	..	..	2	3	..	..	5	0·9
20–24	..	..	2	1	..	..	..	..	5	1	1	1	..	..	7	2	1	1	11	2·1
25–29	..	..	12	2	1	..	..	..	5	2	..	..	..	..	17	4	1	..	22	4·2
30–34	..	..	6	7	1	1	..	..	10	1	..	2	..	..	16	8	1	3	28	5·5
35–39	..	..	11	7	2	..	..	1	7	4	..	2	..	1	18	11	2	2	34	6·6
40–44	..	..	19	5	2	3	..	..	12 (1)	4	1	1	..	..	31 (1)	9	3	4	47 (1)	9·3
45–49	..	2	21 (2)	8	2	3	..	..	5	5	2	..	..	2	26 (2)	13	4	3	48 (2)	9·4
50–54	..	..	24	19	1	..	..	1	4	2	..	3	..	1	28	21	1	3	54	10·5
55–59	..	..	23	22	3 (1)	3	..	..	6 (1)	3	1	..	..	..	29 (1)	25	4 (1)	3	61 (2)	11·9
60–64	..	..	17	21 (2)	..	1	..	..	9 (1)	4	2	1	..	..	26 (1)	25 (2)	2	2	55 (3)	10·7
65–69	..	1	22 (1)	9	1	3	..	..	4	3 (1)	..	..	..	1	26 (1)	12 (1)	1	3	43 (2)	8·4
70–74	..	..	8 (1)	8	2	..	..	..	8 (1)	3	1 (1)	..	..	..	16 (2)	11	3 (1)	..	30 (3)	5·9
75 and over	..	..	16	18	6	..	..	..	11	4	3	..	..	..	27	22	9	..	58	11·4
Not stated	..	..	..	1	1	..	..	..	1	1	..	..	..	..	1	2	1	..	4	0·8
Totals	3	3	186 (4)	130 (2)	22 (1)	14	2	2	88 (4)	39 (1)	11 (1)	13	5	5	274 (8)	169 (3)	33 (2)	27	513*(13)	100·0

* Includes 1 case of Pulmonary and Non-Pulmonary Tuberculosis. Atypical cases in brackets.

TABLE XXXI

RE-ACTIVATED CASES OF TUBERCULOSIS FOR YEAR ENDED 30TH JUNE, 1967
SHOWING AGE, SEX AND STAGE OF DISEASE

Age Group	Males				Females				Persons				
	Min.	Mod. Adv.	Adv.	Non Pul-monary	Min.	Mod. Adv.	Adv.	Non Pul-monary	Min.	Mod. Adv.	Adv.	Non Pul-monary	Total Persons
0–4	..	..	..	..	..	..	..	..	..	..	..	..	..
5–9	..	..	..	..	..	..	..	..	..	..	..	..	..
10–14	..	..	..	..	..	..	..	..	..	..	..	..	..
15–19	..	..	..	..	..	..	..	..	..	..	..	..	..
20–24	..	..	..	..	..	..	..	..	..	..	..	..	..
25–29	..	..	..	..	1	..	..	..	1	..	..	..	1
30–34	..	..	..	..	..	..	..	..	..	..	..	..	..
35–39	1	..	..	..	..	..	..	..	1	..	..	..	1
40–44	3	..	..	..	..	..	..	2	3	..	..	2	5
45–49	..	2	..	..	..	..	..	..	..	2	..	..	2
50–54	..	1	..	..	1	..	..	1	1	1	..	1	3
55–59	1	..	..	..	..	..	..	2	1	..	..	2	3
60–64	..	1	..	..	1	1	..	..	1	2	..	..	3
65–69	..	2	..	..	..	1	..	..	..	3	..	..	3
70–74	1	4	..	..	..	..	..	..	1	4	..	..	5
75 and over	1	7 (1)	..	..	..	..	..	..	1	7 (1)	..	..	8 (1)
Not Stated	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	7	17 (1)	..	..	3	2	..	5	10	19 (1)	..	5	34 (1)

NOTE—For purposes of this form a "re-activated case of tuberculosis" is a patient who requires treatment for pulmonary tuberculosis after having been conventionally considered as "cured". Quoting the Danish Index—"A patient is conventionally considered as "cured" if his pulmonary tuberculosis for three successive calendar years without treatment is proved to be abacillary by adequate bacteriological tests".

TABLE XXXII

NOTIFICATIONS DURING YEAR ENDED JUNE 30TH, 1967, SHOWING BACILLARY STATUS OF PATIENTS AT TIME OF NOTIFICATION

Age Group	Number of Patients Receiving Initial Treatment		Number of Retreatment Cases	
	Bacillary Positive	Bacillary Negative	Bacillary Positive	Bacillary Negative
0– 4	3	6	..	..
5– 9	..	2	..	..
10–14	1	1	..	..
15–19	3	2	..	..
20–24	7	4	..	..
25–29	15	7	1	..
30–34	17	11	..	..
35–39	24	10	1	..
40–44	36	11	3	2
45–49	28	20	2	..
50–54	29	25	3	..
55–59	39	22	3	..
60–64	36	19	3	..
65–69	27	16	2	1
70–74	18	12	3	2
75–	43	15	8	..
Not Stated	2	2	..	..
Totals	328	185	29	5

TABLE XXXIII

NUMBER OF TUBERCULOSIS NOTIFICATIONS AND RATE (PER 100,000 MEAN POPULATION) IN QUEENSLAND

Year	Number of Notifications	Notification Rate
1949–1950	513	43·7
1950–1951	595	49·9
1951–1952	780	62·9
1952–1953	943	74·1
1953–1954	821	63·1
1954–1955	725	54·6
1955–1956	685	50·3
1956–1957	639	45·8
1957–1958	852	59·9
1958–1959	789	54·4
1959–1960	787	53·2
1960–1961	767	51·1
1961–1962	721	47·1
1962–1963	826	53·1
1963–1964	857	54·1
1964–1965	891	55·2
1965–1966	623	37·8
1966–1967	563	29·5

TABLE XXXIV

NUMBER OF DEATHS FROM TUBERCULOSIS AND DEATH RATE (per 100,000 MEAN POPULATION), QUEENSLAND

Calandar Year	Deaths	Death Rate
1950	236	19·8
1951	226	18·4
1952	216	17·2
1953	162	12·6
1954	140	10·6
1955	137	10·2
1956	81	5·7
1957	92	6·6
1958	83	5·9
1959	78	5·4
1960	83	5·7
1961	72	4·7
1962	84	5·5
1963	80	5·1
1964	75	4·7
1965	42	2·6
1966	43	2·6

TABLE XXXV

TUBERCULOSIS NOTIFICATIONS OF MIGRANTS—YEAR ENDED 30TH JUNE, 1967

Arrival in Australia	British		Non-British	
	Number	Percentage of Total Notified Migrants	Number	Percentage of Total Notified Migrants
Within 1 year	3	2·8	4	3·4
Within 5 years	8	7·5	10	9·8
Within 10 years	3	2·8	4	3·4
Over 10 years	45	42·0	30	28·3
Totals	59	55·1	48	44·9

Migrants (107) were 19·0 per cent. of all notified tuberculosis cases.

TABLE XXXVI

CASES OF INFECTION WITH ATYPICAL MYCOBACTERIUM

Clinical Classification	Locality		Sex		Ages								Race			Bacteriological Grouping (Runyon)				
	Country	Brisbane and Surrounding	M	F	0–10	10–20	20–30	30–40	40–50	50–60	60–70	70+	Abor.	Aust.	Non-Aust.	I	II	III	IV	Other
Clinically Significant Atypical Disease ..	30	105	98	37	..	1	1	3	6	20	47	57	1	106	28	2	14	111	25	..
Associated Diseases— (1) True Pulmonary Tuberculosis ..	8	106	84	30	..	..	3	2	7	22	37	43	1	84	29	4	20	76	29	1
(2) Bronchiectasis ..	1	20	7	14	..	..	1	2	5	2	6	5	..	20	1	..	2	13	5	..
(3) Non-specific fibrosis	..	36	22	14	..	..	..	..	1	5	17	13	..	32	4	..	10	25	8	..
(4) Others (including non-pulmonary) e.g., Ulcerated Colitis and Polycythaemia Vera, &c.	2	34	24	12	..	..	2	1	8	5	10	10	..	29	7	..	3	24	13	..
Chance Finding ..	3	65	36	32	..	..	..	2	8	9	23	26	..	54	14	3	17	30	20	..
Cervical Glands ..	1	15	4	12	16	..	..	..	..	..	..	..	..	16	.. (10 not proven bacteriologically)	..	3	3	..	..
Surgical Cases	8	16	23	1	..	..	1	8	5	9	1	..	..	21	3	3	3	18	2	..
M. Avian Cases ..	..	3	3	..	..	..	..	..	1	2	..	..	..	3	..	..	..	3	..	..
	53	400	301	152	16	1	8	18	41	74	141	154	2	365	86	12	72	303	102	1
		453		453								453			453					490

TABLE XXXVII

NUMBER OF NEW CASES OF CARCINOMA OF THE LUNG SEEN AT THE CHEST CLINIC, BRISBANE

1st July, 1958 to 30th June, 1959	56
1st July, 1959 to 30th June, 1960	65
1st July, 1960 to 30th June, 1961	83
1st July, 1961 to 30th June, 1962	111
1st July, 1962 to 30th June, 1963	109
1st July, 1963 to 30th June, 1964	100
1st July, 1964 to 30th June, 1965	101
1st July, 1965 to 30th June, 1966	116
1st July, 1966 to 30th June, 1967	147

TABLE XXXVIII

CASES OF LUNG CANCER FOUND BY M.M.R.

1959	3
1960	40
1961	50
1962	16
1963	68
1964	70
1965	66
1966	90
	403

TABLE XXXIX

MASS X-RAY SURVEY—QUEENSLAND—FOR YEAR ENDED 31ST DECEMBER, 1966

Age	Number X-Rayed	Active		Inactive		Suspected Active		Other Conditions	
		Number	Per 1,000 Examined	Number	Per 1,000 Examined	Number	Per 1,000 Examined	Number	Per 1,000 Examined
0–14	9,125	..	..	4	0·4	2	0·2	49	5·4
15–19	41,615	1	0·02	16	0·4	9	0·2	274	6·6
20–24	30,646	2	0·07	37	1·3	10	0·3	230	7·5
25–29	25,114	10	0·4	48	1·9	14	0·5	253	10·1
30–34	23,452	9	0·4	69	2·1	17	0·7	263	11·2
35–39	26,012	11	0·4	103	3·9	30	1·2	400	15·4
40–44	26,436	14	0·5	141	5·3	29	1·1	575	21·7
45–49	24,417	11	0·4	143	5·9	29	1·2	587	24·1
50–54	22,391	11	0·5	146	6·5	27	1·2	660	25·3
55–59	19,328	13	0·7	189	9·8	38	1·9	764	39·6
60–64	15,601	13	0·9	164	10·5	39	2·5	727	46·6
65–69	13,566	10	0·7	161	11·1	42	3·1	783	57·7
70–74	10,256	14	1·4	107	10·4	17	1·7	648	63·2
75 and over	12,256	14	1·1	140	11·4	28	2·3	792	64·6
Not Stated	3,913	3	0·9	11	2·8	4	1·1	60	15·3
TOTALS	304,128	136	0·4	1,479	4·9	335	1·1	7,065	23·2

TABLE XL

COMPULSORY MASS CHEST X-RAY SURVEY OF PERSONS OVER 14 YEARS OF AGE FROM 1ST JANUARY, 1966 TO 31ST DECEMBER, 1966

Locality	Estimated Number of Persons over 14 years of Age	Number of Micro Films Taken	Number of Active Cases Found	Number of Cases per 1,000 Micro Films Taken	Inactive Cases	Non-specific Fibrosis	Intercurrent or Pneumonic	Cardiac Abnormality	Carcinoma	Other Tumour	Pneumoconiosis	Bronchiectasis	Sarcoidosis	Other Diseases	No Significant Abnormality After Investigation	Under Investigation	Old Cases Rediscovered
Brisbane Division	152,742	122,487	59	0·5	405	484	62	242	32	13	16	75	17	187	1,503	..	209
Rockhampton Division ..	11,251	9,834	1	0·1	60	73	3	27	1	..	..	13	..	15	125	..	..
Cairns Division	60,355	56,584	37	0·6	532	203	66	193	17	13	18	28	1	169	179	325	..
Toowoomba Division ..	17,352	16,141	2	0·1	83	73	11	36	5	5	1	11	..	57	128	10	1
Brisbane Metropolitan ..	101,075	92,047	30	0·3	350	446	57	215	31	13	6	59	9	188	1,514	..	25
Special Surveys	7,900	7,035	7	0·9	49	17	5	12	4	..	2	1	..	17	111	..	21
Total	350,675	304,128	136	0·4	1,479	1,296	204	725	90	44	43	187	27	633	3,560	335	256

TABLE XLI

NUMBER OF X-RAY EXAMINATIONS CARRIED OUT—1ST JANUARY, 1966 TO 31ST DECEMBER, 1966

—	Chest Clinic	Chest X-Ray Centre	Mobile Units	Royal Brisbane Hospital	Princess Alexandra Hospital	Rock-hampton	Too-woomba	Towns-ville	Cairns	Thursday Island	Total
Micro films ..	17,733	10,088	304,128	7,165	18,270	1,159	4,934	1,544	1,216	..	366,237
Micro Re-Rays ..	6,154	..	4,108	381	206	169	187	112	..	..	11,317
Other large films ..	16,163	664	1,093	..	..	2,214	4,949	3,882	3,775	1,883	34,623
Total	40,050	10,752	309,329	7,546	18,476	3,542	10,080	5,538	4,991	1,883	412,177

TABLE XLII

COMPULSORY MASS CHEST X-RAY SURVEY FOR YEAR ENDED 31ST DECEMBER, 1966

Attended Following Electoral Check	Number of Persons X-Rayed	Number of Cases of Active Tuberculosis Discovered	Rate of Active Tuberculosis Per 1,000 Micro Films Taken
Metropolitan ..	4,079	6	1·47
Country ..	3,152	13	4·1
Total ..	7,231	19	2·6
Attended Within Specified Period ..	304,128	136	0·4

TABLE XLIII

TUBERCULIN TESTS AND B.C.G. VACCINATIONS FOR YEAR ENDED 30TH JUNE, 1967

Locality	Number Tested	Did Not Return		Positive		Positive After Previous B.C.G.		Negative		B.C.G. Given		B.C.G. Not Given		B.C.G. Refused	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Metropolitan	7,901	242	3·1	1,773	22·4	2,288	28·9	3,598	45·6	2,565	72·3	952	26·4	81	1·3
Metropolitan and Brisbane Division Schools	16,805	641	3·8	1,874	11·1	675	4·0	13,615	81·1	13,260	97·5	98	0·6	257	1·9
Country	10,401	592	5·7	3,499	33·6	2,799	26·9	3,511	33·8	2,075	59·1	1,405	40·1	31	0·8
Country Schools	17,875	645	3·7	4,748	26·6	3,036	16·9	9,446	52·8	8,400	88·9	994	10·5	52	0·6
Totals	52,982	2,120	4·1	11,894	22·4	8,798	16·6	30,170	56·9	26,300	87·2	3,449	12·4	421	0 4

TABLE XLIV

TUBERCULIN TESTS AND B.C.G. VACCINATIONS OF MIGRANTS FOR YEAR ENDED 30TH JUNE, 1967.

Locality	Number Tested	Did Not Return		Positive		Positive After Previous B.C.G.		Negative		B.C.G. Given		B.C.G. Not Given		B.C.G. Refused	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Metropolitan	650	25	3·8	339	52·2	113	17·4	173	26·6	108	62·4	61	35·3	4	2·3
Metropolitan and Brisbane Division Schools	1,000	47	4·7	125	12·5	61	6·1	767	76·7	742	96·7	5	0·7	20	2·6
Country	665	43	6·5	467	70·2	32	4·8	123	18·5	60	48·7	63	51·3	..	..
Country Schools	270	8	2·9	59	21·9	41	15·2	162	60·0	131	80·8	31	19·2	..	..
Totals	2,585	123	4·8	990	38·2	247	9·6	1,225	47·4	1,041	84·9	160	13·2	24	1·9

TABLE XLV

COMPLICATIONS FOLLOWING VACCINATIONS IN 2,881 PERSONS TESTED—YEAR ENDED 30TH JUNE, 1967

Age Group	Number Given B.C.G.	Local Ulcer		Enlarged Glands		Incised Glands		Total Complications	
		No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.
0– 2 years	618	14	2·3	5	0·9	2	0·3	21	3·4
3–14 years	1,190	16	1·3	1	0·1	1	0·1	18	1·5
Over 14 years	1,073	24	2·2	1	0·1	..	..	25	2·3
Totals	2,881	54	1·9	7	0·2	3	0·1	64	2·2

TABLE XLVI

NUMBER OF TUBERCULOSIS ALLOWANCES BEING PAID IN QUEENSLAND AT 30TH JUNE, 1967

——	Male	Female	Total
Number accommodated in Tuberculosis Institutions ..	134	40	174
Number not so accommodated	76	25	101
Totals	210	65	275

Period in Receipt of Allowance	Male	Female	Total
Under 1 year	178	54	232
1–2 years	17	3	20
2–3 years	5	3	8
3 years and over ..	10	5	15
Totals	210	65	275

DIVISION OF INDUSTRIAL MEDICINE

Director of Industrial Medicine: E. M. RATHUS, M.B., Ch.B. (Cape Town)
Radiation Health Physicist: K. A. STEVENS, B.Sc. (Q'ld)
Inspector in Charge—Weil's Disease Control: D. KENNEDY, M.R. San. I.
Industrial Health Inspector: J. W. MULCAHY, A.R. San. I.

This Division provides a service for the investigation of occupational health hazards. The scientific resources of the Government Chemical Laboratory are relied on for detailed delineation of physical and chemical data and the Laboratory of Microbiology and Pathology for biochemical and related studies. The Chest Clinic co-operates in X-ray surveys of men in dusty occupations, and a close liaison is maintained with the Department of Labour and Tourism, and its Division of Occupational Safety.

Routine Inspections

Over 200 inspections were carried out covering a large range of industries. Many of these posed interesting problems peculiar to special processes which provided opportunities for detailed scientific assessment.

Noise

Complete surveys, comprising noise analysis and audiometric tests, were carried out in ten firms. Testing for possible evidence of hearing damage occasioned by noise was carried out on 312 men. Undoubted evidence of significant hearing loss was demonstrated in a number of cases, always in long-term exposure to noise levels in the damage zone.

Noise surveys only were done on five premises and advicc proffered. During the year a sound level meter of excellent design, together with an octave-band-analyser was acquired. Its application to noise problems has already been proved and clear-cut analyses are possible so that opinions may be based on accepted international standards.

Lead Industry

Routine supervision of major lead industries proceeded in the usual pattern. No untoward incidents occurred during the year but several industries remain potentially quite hazardous. Investigations to determine environmental lead concentrations have enabled the Division to make logical recommendations for improvements in design and work method, but there is no doubt that lead maintains a pre-eminent place as an occupational health hazard.

As an illustration it was found that lead in air concentrations ranged from 1·0 to 3·8 milligrams per cubic metre during furnace drossing in a well-appointed factory. These values are 5 to 9 times the maximum allowable concentration. Fume extraction from furnaces is always costly and has great difficulties in design.

About 150 visits were made to the lead industry and specimens taken from the men on a routine basis. The tests employed are stippled cells, haemoglobin, coproporphyrin excretion, lead in urine and lead in blood.

General

Upwards of 150 inspections were made to industry to investigate problems relating to health matters in the environment of the worker. Where necessary these were followed by detailed scientific assessment of the situation. The overall picture is intensely varied and extends from the rubber industry to methyl bromide fumigation, from collieries to asbestos exposure.

Safety precautions in intermittent high exposure to hydrofluoric acid (HF) were found to be adequate, but there was certainly no avenue for error. A case of mild carbon monoxide poisoning occurred in a large foundry at a furnace charged with coke, limestone and pig-iron. Concentrations of 2000 p.p.m. were found three feet from the furnace door—i.e. at the loading point—during charging. High volume fans and redesign of the stack solved the problem.

A severe stress situation was looked into during an attempt to spray aluminium on to iron bulkheads by the metallising process within a confined space. Within five minutes the dry bulb was 165°F, the black globe 167°F and the wet bulb 95°F. The situation was pronounced intolerable, and as no practical solution was forthcoming, the venture was abandoned.

Pesticides

Several large formulators were visited and safety precautions discussed. Dieldrin and DDT were estimated in the blood of formulators constantly exposed to these chlorinated hydrocarbons to assess efficacy of enclosed methods and procedure.

Asbestos

A continuing survey of workmen exposed to an asbestos hazard has uncovered several men with radiological evidence of asbestosis. One man has been put on compensation with dyspnoea on effort, positive X-ray findings and confirmatory lung function tests.

Two cases of pleural mesothelioma have been diagnosed during life and confirmed on post mortem examination. One man had significant asbestos exposure in one of the firms referred to in this paragraph, and the other had had intermittent exposure in naval dockyards in the United Kingdom on pipe lagging. No opinion is expressed as to an absolute association, but asbestos fibres were present in all lung sections and in tumor tissue.

Carbon Tetrachloride

A further case of suppression of renal function due to excessive exposure of carbon tetrachloride with the usual association with ethyl alcohol was diagnosed on breath analysis seven days after exposure. This confirms the observations made in the report of 1965-66, and the method has proved to be valuable in back-tracking unusual incidents of this type where, on first questioning, the individual did not remember using carbon tetrachloride.

Boards, &c.

Official attendance was required at meetings of the Occupational Health Committee of the National Health and Medical Research Council, the Health Welfare and Safety Board of the Department of Labour and Tourism, the Chest Board of the State Government Insurance Office and the Radiological Advisory Council of the Department of Health.

Industry in the Tropics

During a trip to Northern Queensland the opportunity was again taken to view the problems of bagasse dust and heat stress in sugar mills in tropical Queensland. This was followed by a detailed investigation of heat stress in foundry operations in Townsville. Much useful data was obtained and a detailed report submitted to industry and the unions.

Publications, Papers &c.

Publication:

Rathus, E. M. (1967) "The Clinical Diagnosis of Lead Poisoning", Med. J. Aust. 1:371.

The Director read a paper on "Agricultural Poisons" at the North Queensland Medical Conference and gave addresses on this topic to the Agricultural and Veterinary Chemicals Association of Australia during the year.

The Director and the Radiation Health Physicist took part in a symposium on "Radiation Hazards to Man" as part of a series of Lectures to the Australian Institute of Radiographers. The Industrial Health Inspector has given talks on Industrial Deafness to a Safety Officers' Course sponsored with the Department of Labour and Tourism.

Radiation Health Physics Section

This section has continued to supervise radiation health in the use of ionising radiation in its many and varied applications in Queensland. Such supervision has involved the section in the assessment of exposure of radiation workers by means of the film badge service, the radiation survey of radiation areas and equipment, the investigation of methods of use of ionising radiation and the advising on the design of radiation areas and the protective barriers needed in such areas.

(*a*) *Licence and Registration*

The number of licences issued under the Radio-active Substances Act during the year totalled 168, an increase of 14 over last year. 525 Certificates of Registration of Irradiating Apparatus have been issued, compared with 426 in 1965-66.

(*b*) *Film Badge Service*

This service has stabilised and the number of radiation workers covered by this service remains the same as the previous year.

(c) Committees

The radiation Health Physicist has been appointed to the Radiation Health (Standing) Committee of the National Health and Medical Research Council whose purpose is to draw up a code of practice for the safe use of ionising radiation in medicine and dentistry.

Weil's Disease Campaign

A further increase in the number of mechanical harvesters to 377 together with an almost equal number of mechanical loaders greatly assisted in rapid handling of the crop. There was a drop in the number of manual cutters signed on—1,709 as against 2,012 in 1965-66. It is of interest that between 1960 and 1966 the number of manual cutters signed on has dropped by almost 2,500 from Ingham district north. It is considered that the substantially reduced incidence of leptospirosis in the sugar industry over the last few years could be explained by the drop in the number of manual cutters and the consequent minimisation of close personal contact with infective material by mechanical cane-cutting. However, an occasional case does occur amongst men using mechanical harvesters.

Extensive flooding of northern cane areas during the month of March rendered fields potentially dangerous for the 1967 season. Increased cases of leptospirosis resulted in most districts following this and before the large labour force was committed in the field.

Inspections by the field staff during the harvesting season showed an increase. However burn orders issued for health reasons registered a decrease owing to favourable field conditions. This was in distinct contrast to the 1965 season when the reverse was the case.

Cleaning up operations for the destruction of rat harbourages were carried out by farmers on the completion of harvesting and farm sanitation received attention. Drainage works of a major and minor nature are being carried out in most areas and are to be commended as having an indirect effect on leptospiral control by creating conditions disadvantageous to their survival in the soil.

Thallium wheat bait continues to be the bait preference followed by phosphorus on bread, and aerial dropping of thallium sulphate baits has been adopted in the Ingham district.

Protective clothing and footwear as a preventive measure seems to be a lost cause despite publicity by medical practitioners, issuing of educational pamphlets, and personal contact by the field staff.

The usual complaints of faulty disposal of refuse and soil pollution at cutters' barracks are received and attended to.

A summary of occupational fever cases reported are presented with all ages and sexes represented. Figures in parenthesis show the corresponding incidence for the previous year.

SUMMARY OF OCCUPATIONAL FEVERS

District	Lepto-spirosis	Scrub Typhus	Q. Fever	Brucellosis
Babinda ..	5 (3)	0 (2)	0 (1)	0 (0)
Innisfail	11 (11)	0 (0)	0 (2)	0 (0)
Tully	7 (1)	0 (0)	1 (0)	0 (0)
Cairns (including Gordonvale) ..	12 (13)	3 (1)	2 (10)	1 (2)
Mossman ..	4 (7)	0 (1)	0 (0)	0 (0)
Ingham	3 (1)	0 (0)	0 (0)	0 (0)
Totals ..	42 (36)	3 (4)	3 (13)	1 (2)

DIVISION OF MATERNAL AND CHILD WELFARE

Director: H. C. Murphy, M.B., B.S.

Deputy Director: J. McFarlane, M.B., B.S., M.R.C.P. (Edin.)

Medical Officer: J. J. B. Refshauge, O.B.E., M.B., B.S., M.Sc., Dip.Ed., D.P.H.

Medical Officer (Part-time): M. F. Nasser, M.B., B.S., M.R.C.P.

Superintendent: M. F. Nixon, S.R.N., F.C.N.A.

Deputy Superintendent: A. P. Hertweck, S.R.N.

During 1966, for the fifth year in succession, there was a fall in the total number of births in Queensland. However, it is pleasing to note that 23,890 of the total of 32,843 babies born, visited the clinics. This represents a 72 per cent. response as compared to the 68 per cent. response for 1965.

The total births in the city of Brisbane decreased from 12,492 to 12,044. During the same period the population of Brisbane increased from 642,068 to 656,540.

This population growth has occurred mainly on the south side of the Brisbane River and some centres there have had marked increase in attendances, necessitating an increase in clinic hours in various areas.

There are now 273 centres throughout the State, 83 being in the metropolitan area, and 190 being in the country districts.

New centres were opened at Sunnybank, Brassall and Mount Garnet.

New resident centres will be completed during the coming year in Southport and Murgon.

The Mobile Clinic continues to serve a very useful purpose in visiting areas where either transport or accommodation, or both, is not available. Areas visited were Strathpine, Lawnton, Albany Creek, Capalaba, Tingalpa, Arana Hills, Bunyaville, Ferny Grove, Deception Bay, Moggill, Blunder Road Inala, Bribie Island and Jindalee.

Lessons in mothercraft were given at 161 schools throughout the State, the total attendance being 12,458.

Dr. Jean McFarlane has been absent from Brisbane doing post-graduate study in Great Britain. She returned in April, 1967, having obtained M.R.C.P. (Edinburgh). During her absence, Dr. D. Champion, Dr. M. Brodie, Dr. David Fraser and Dr. Robert Miller conducted ante-natal, babies' and toddlers' clinics.

The staffing position has shown some improvement over the past year and less difficulty has been experienced in keeping centres open.

The desire to work in city areas still persists, and the appointments to permanent staff are fewer than desirable to maintain a balance between temporary and permanent officers.

The present staff position is permanent staff 79 and temporary staff 92—.

Seven Sisters were appointed on probation to the permanent staff.

Miss Mona Nixon retired on the 30th June, 1967, after 39 years in the service. Prior to becoming Superintendent in 1960 Miss Nixon saw service in metropolitan and country centres and the Rail Car, and was Matron of the Maternal and Child Welfare Home at Clayfield for six (6) years and in December, 1949, was Matron of the Maternal and Child Welfare Home, St. Paul's Terrace, until her appointment as Deputy Superintendent in 1958.

Miss Hertweck was appointed Superintendent on Miss Nixon's retirement.

TABLE XLVII

Attendances of Infants and Children at Maternal and Child Welfare Centres and Sub-Centres

——	1964–65	1965–66	1966–67
Metropolitan			
Chermside and Sub-Centres	11,028	11,955	12,416
Children's Hospital Clinic	417	348	298
Fortitude Valley and Sub-Centres	21,727	21,035	21,868
Herschell Street and Sub-Centres	19,253	18,399	18,731
Inala and Sub-Centres	9,203	10,381	9,431
Ipswich and Sub-Centres	18,052	17,673	18,401
Margate and Sub-Centres	..	5,922	6,447
Mobile Clinic	6,273	6,776	7,074
Moorooka and Sub-Centres	10,432	10,231	9,432
Mount Gravatt and Sub-Centres	14,429	16,440	16,046
Nundah and Sub-Centres	11,306	11,219	11,137
Paddington and Sub-Centres	12,267	10,674	11,099
Sandgate and Sub-Centres	13,396	8,882	8,430
West End and Sub-Centres	8,207	9,560	11,989
Wooloongabba and Sub-Centres	25,954	23,968	22,629
Wynnum and Sub-Centres	11,893	11,020	12,842
Total Brisbane Statistical Division	175,785	176,810	198,270
Country			
Atherton and Sub-Centres	3,438	3,130	3,482
Ayr and Sub-Centres	7,072	7,706	8,293
Barcaldine and Sub-Centres	1,491	1,446	1,611
Biloela and Sub-Centres	4,874	5,353	4,956
Bowen and Sub-Centres	5,094	5,403	4,701
Bundaberg and Sub-Centres	11,559	11,006	10,275
Cairns and Sub-Centres	18,548	18,145	14,826
Charleville and Sub-Centres	2,596	3,126	3,018
Charters Towers	3,088	3,431	3,923
Chinchilla and Sub-Centres	..	2,779	2,992
Dalby and Sub-Centres	5,193	3,160	3,144
Emerald and Sub-Centres	3,797	3,434	3,389
Gayndah and Sub-Centres	5,800	5,063	4,949
Gladstone and Sub-Centres	3,981	4,109	5,090
Goondiwindi and Sub-Centres	6,085	5,253	4,488
Gympie and Sub-Centres	9,589	9,141	7,713
Ingham and Sub-Centres	5,801	5,572	5,832
Innisfail and Sub-Centres	8,705	8,438	7,731
Kingaroy and Sub-Centres	2,911	3,093	3,064
Longreach and Sub-Centres	3,504	3,620	3,621
Mackay and Sub-Centres	18,107	18,394	17,983
Mareeba and Sub-Centres	6,408	6,175	6,103
Maryborough and Sub-Centres	10,154	9,210	8,965
Mount Isa and Sub-Centres	7,520	7,038	6,847
Murgon and Sub-Centres	3,207	3,161	2,959
Nambour and Sub-Centres	6,638	6,769	7,028
Railway Car and Sub-Centres	4,209	3,500	3,526
Rockhampton and Sub-Centres	16,820	17,291	19,692
Roma and Sub-Centres	5,179	5,160	6,201
Southport and Sub-Centres	9,287	10,764	11,131
Toowoomba and Sub-Centres	11,390	13,846	13,802
Townsville and Sub-Centres	19,946	21,477	20,363
Warwick and Sub-Centres	5,656	6,892	7,567
Social Welfare Service	5,207	4,763	5,169
Total Country	260,906	264,521	244,434
Brisbane Statistical Division	175,785	176,810	198,270
Country	260,906	264,521	244,434
Grand Totals	436,691	441,331	442,704

VITAL STATISTICS

Births registered in Queensland during 1966 numbered 32,843, compared with 34,972 and 33,551 in 1964 and 1965 respectively. The birth rate per 1,000 mean population was 19·8, compared with 22·1 in 1964 and 20·9 in 1965, and was the lowest since 1938 when it was 19·0. Since 1961 all States have experienced falls in the birth rate and in the period 1961 to 1966 the rate for Australia as a whole fell from 22·9 to 19·3, or by 15·7 per cent., while the rate for Queensland fell from 24·2 to 19·8, or by 18·2 per cent.

Of the births registered during 1966, 16,849 were males and 15,994 were females, equivalent to 105·3 males for every 100 females.

MARRIAGES

Registration of marriages in 1966 numbered 13,325 giving a marriage rate of 8·0 per 1,000 mean population. Minors married numbered 8,098, comprising 2,122 males and 5,976 females.

INFANTILE MORTALITY

Deaths of infants aged under one year numbered 581 comprising 326 males and 255 females, compared with 598 in 1965. The infant mortality rate was 17·7 deaths per thousand live births, the lowest ever recorded.

The rates for the different parts of the State were Brisbane Statistical Division 14·8, other sub-tropical areas 18·5, and tropical areas 21·9 per 1,000 live births.

The total number of deaths due to prematurity (unqualified) was 113 compared with 100 in 1965. Deaths from prematurity since 1957 were as follows:—

1957	163
1958	139
1959	118
1960	140
1961	141
1962	131
1963	144
1964	129
1965	100
1966	113

In 1966 deaths from immaturity (unqualified) increased by 16 and 2 respectively in the Brisbane Statistical Division and tropical areas while other sub-tropical areas recorded 5 fewer deaths than in 1965.

Deaths of children aged one year and under five years

(*a*) Deaths of children aged one year and under two years during the year 1966 numbered 72, representing a death rate of 2·1 per 1,000 children in that age group. There were 63 deaths in 1965, and a corresponding death rate of 1·8 per 1,000.

The chief causes of death were—

Accidents		16
Gastro-enteritis		18
Pneumonia—		
Lobar pneumonia	2	
Bronchopneumonia	5	10
Other types	3	
Congenital malformations		10
Meningitis		3

Of the 16 deaths (10 males and 6 females) due to accidents, 6 were caused by drowning, 4 by accidental poisoning and 2 by motor vehicle accidents.

(*b*) The deaths of children aged two years and under five years during the year numbered 100, representing a death rate of 0·9 per 1,000 children in that age group. Deaths in 1965 were 95, with a corresponding death rate of 0·9 per 1,000.

The chief causes of deaths were—

Accidents	37
Pneumonia (all kinds)	11
Gastro-enteritis	9
Malignant neoplasms	8
Leukaemia and Aleukaemia	4
Measles	3
Lymphosarcoma	2

Of the 37 deaths due to accidents, 14 were caused by motor vehicle accidents, 4 by drowning, 2 by fire and explosion of combustible material and 4 by accidental poisoning.

MATERNAL MORTALITY

The maternal mortality rate was 0·40 per 1,000 live births. Thirteen deaths were caused by diseases and accidents of pregnancy and childbirth. Of these, 6 were due to complications of childbirth and 4 to diseases and accidents of pregnancy (excluding 3 abortions). The causes of the 6 deaths due to diseases and accidents of childbirth were as follows:—

Malposition/Obstructed Labour	3
Post-Partum Haemorrhage	1
Puerperal Sepsis	1
Cerebral Haemorrhage	1

The cause of the 4 deaths due to diseases and accidents of pregnancy were as follows:—

Toxaemia of Pregnancy	2
Ectopic Gestation	1
Pulmonary Embolus	1

The Maternal Mortality Committee which discusses each maternal death and deaths of expectant mothers from causes not directly related to the pregnancy, has finished discussing those from 1961-1965. Table XLIX gives details of the primary cause of the 80 maternal deaths during that time. An additional 20 associated deaths were discussed. In 42 of the patients it was thought that there was a primary avoidable factor present. Ten patients died during the 5 years as a result of abortion. Nine were over 32 years of age and had more than 1 child—7 were married, 1 widowed and 1 divorced. The only single patient was a 17-year-old primigravida. These findings correspond to those obtained in Great Britain where abortions are sought to limit family size rather than to prevent an illegitimate birth.

It is of interest to note that since the Maternal Mortality Committee was formed in 1961 there has been a rapid fall in the maternal death rate. This has been accompanied by a fall in the still births and infant deaths.

TABLE XLVIII

RELATION OF MATERNAL DEATHS AND INFANT MORTALITY

Year	Total Births	Stillbirths	Infant Deaths	Maternal Deaths
1961	36,637	553	733	28
1962	35,690	520	754	23
1963	35,934	476	722	9
1964	34,972	402	673	10
1965	33,551	391	598	10

It may be a false premise but it is tempting to think that the work of the Maternal Mortality Committee was beginning to take its effect by 1963 with the result that improved standards of obstetrical care have resulted in increased maternal and infant survival.

The Committee has compiled a further bulletin, on "Anaesthesia in Pregnancy". This has been printed by the Queensland Health Education Council and has been distributed with the Australian Medical Association newsletter to medical practitioners. The bulletins distributed to date are—

"Prevention and Management of Eclampsia";

"Post-Partum Haemorrhage";

"Shock in Obstetrics";

"Caesarean Section";

"Puerperal Intra-Partum and Abortional Infection as a Cause of Maternal Death".

TABLE XLIX

ANALYSIS OF THE PRIMARY CAUSE OF MATERNAL DEATHS—1961–1965

—	1961	1962	1963	1964	1965	Total
Haemorrhage	4 (4)	5 (3)	3 (2)	2 (1)	5 (4)	19 (14)
Sepsis	9 (7)	1 (1)	1 (1)	3 (2)	1	15 (11)
Toxaemia	4 (2)	1 (1)	0	0	0	5 (3)
Thrombo-embolic conditions	2	6	1	2 (1)	3	14 (1)
Anaesthesia	0	2 (2)	1	0	1	4 (2)
Shock	2 (2)	3 (1)	0	0	0	5 (3)
Cardio-vascular renal disease	4	3 (1)	2	1 (1)	0	11 (2)
Associated diseases	0	1	0	1	0	2
Unclassified	3	1 (1)	1	1 (1)	0	5 (2)
	28 (15)	23 (10)	9 (3)	10 (6)	10 (4)	80 (38)

NOTE.—Brackets = Avoidable factor present.
Abortions and Caesarean Sections have been classified as to the main cause of death, e.g., haemorrhage, sepsis, &c.

TABLE L

A COMPARISON OF MATERNAL MORTALITY, QUEENSLAND AND AUSTRALIA

Year	Maternal Deaths		Maternal Mortality Rate*	
	Queensland	Australia	Queensland	Australia
1911	98	615	5·77	5·03
1921	108	643	5·31	4·72
1931	108	650	6·06	5·48
1941	92	490	4·28	3·64
1951	35	203	1·18	1·05
1956	29	119	0·89	0·56
1957	21	138	0·62	0·63
1958	16	111	0·47	0·50
1959	21	104	0·59	0·46
1960	24	121	0·68	0·53
1961	28	107	0·76	0·44
1962	23	85	0·64	0·33
1963	9	64	0·25	0·27
1964	10	75	0·29	0·33
1965	10	74	0·30	0·33
1966	13	66	0·40	0·30

* Per 1,000 live births

TABLE LI

MATERNAL MORTALITY RATES FOR EACH STATE AND TERRITORY OF AUSTRALIA FOR THE YEAR 1966

State or Territory	Number of Maternal Deaths	Maternal Mortality Rate
New South Wales	22	0·28
Victoria	16	0·25
Queensland	13	0·40
South Australia	4	0·20
Western Australia	7	0·41
Tasmania	2	0·27
Northern Territory	..	..
Australian Capital Territory	2	0·86
Australia	66	0·30

TABLE LII

CAUSES OF DEATHS IN INFANTS UNDER ONE YEAR—QUEENSLAND, 1966

Cause	1965	1966				Increase or Decrease
		Brisbane Statistical Division	Sub-Tropical (*a*)	Tropical	Total	
Immaturity (unqualified)	100	43	38	32	113	+13
Immaturity with mention of any other subsidiary condition	1	..	1	..	1	
Congenital Malformations	123	45	33	33	111	−12
Post-natal Asphyxia and Atelectasis	64	15	16	14	45	−19
Intracranial and Spinal injury at birth	39	18	8	11	37	− 2
Other birth injury	29	7	11	12	30	+ 1
Haemolytic disease of newborn (Erythroblastosis)	11	11	3	4	18	+ 7
Pneumonia of newborn	18	9	4	1	14	− 4
Haemorrhagic disease of newborn	5	2	1	4	7	+ 2
Neo-natal disorders arising from Maternal Toxaemia	10	1	3	5	9	− 1
Diarrhoea of newborn	2	..	..	..	..	− 2
Other diseases peculiar to early infancy	51	27	13	13	53	+ 2
Total of diseases peculiar to early infancy	453	178	131	129	438	−15
Bronchopneumonia, other and unspecified Pneumonia	38	9	21	15	45	+ 7
Gastro-enteritis and Colitis	21	1	6	18	25	+ 4
Lobar Pneumonia	3	..	2	7	9	+ 6
Diseases of Pancreas	3	1	1	..	2	− 1
Meningitis except Meningococcal and Tuberculous	6	5	2	2	9	+ 3
Accidents, Poisonings and Violence	24	3	9	4	16	− 8
All other causes	50	19	13	5	37	−13
Total deaths under 1 year	598	216	185	180	581	−17

(*a*) Excluding Brisbane Statistical Division.

TABLE LIII

Causes of Deaths in Infants Under One Month of Age—Queensland, 1966

Cause	1965	1966				Increase or Decrease
		Brisbane Statistical Division	Sub-Tropical (*a*)	Tropical	Total	
Immaturity (unqualified)	99	43	38	32	113	+14
Immaturity with mention of any other subsidiary condition	1	..	1	..	1	
Congenital malformations	74	23	21	12	56	−18
Post-natal Asphyxia and Atelectasis	64	15	16	13	44	−20
Intracranial and Spinal injury at birth	39	18	8	11	37	− 2
Other birth injury	29	7	11	12	30	+ 1
Haemolytic diseases of newborn (Erythroblastosis)	11	11	3	4	18	+ 7
Pneumonia of newborn	18	9	4	1	14	− 4
Haemorrhagic disease of newborn	5	2	1	4	7	+ 2
Neo-natal disorders arising from Maternal Toxaemia	10	1	3	5	9	− 1
Diarrhoea of newborn	2	..	..	..	..	− 2
Other diseases peculiar to early infancy	50	27	13	13	53	+ 3
Total of diseases peculiar to early infancy	402	156	119	107	382	−20
All other causes	19	7	7	2	16	− 3
Totals	421	163	126	109	398	−23

(*a*) Excluding Brisbane Statistical Division.

TABLE LIV

Causes of Deaths in Infants More than One Month, but Less than Twelve Months of Age—Queensland, 1966

Cause	1965	1966				Increase or Decrease
		Brisbane Statistical Division	Sub-Tropical (*a*)	Tropical	Total	
Immaturity (unqualified)	1	..	..	..	..	− 1
Immaturity with mention of any other subsidiary condition	..	..	..	..	..	
Congenital malformations	49	22	12	21	55	+ 6
Post-natal Asphyxia and Atelectasis	..	..	..	1	1	+ 1
Other diseases peculiar to early infancy	1	..	..	..	..	− 1
Total of diseases peculiar to early infancy	51	22	12	22	56	+ 5
Bronchopneumonia, other and unspecified Pneumonia	38	9	21	15	45	+ 7
Gastro-enteritis	21	1	6	18	25	+ 4
Lobar Pneumonia	3	..	2	7	9	+ 6
Diseases of Pancreas	2	1	1	..	2	..
Meningitis, except Meningococcal and Tuberculous	6	4	..	2	6	..
Accidents, Poisonings and Violence	17	1	8	4	13	− 4
All other causes	39	15	9	3	27	−12
Total deaths 4 weeks and under 1 year	177	53	59	71	183	+ 6

(*a*) Excluding Brisbane Statistical Division.

TABLE LV

Deaths of Infants Under One Year of Age from Congenital Malformations*

Congenital Malformations	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Monstrosity	7	8	6	8	4	6	10	9	3	8
Spina bifida and meningocele	17	10	18	20	16	14	19	13	12	8
Congenital hydrocephalus	11	14	12	8	16	15	5	4	9	6
Nervous system	3	5	2	5	5	..	5	5	2	4
Circulatory system	59	47	73	72	77	56	59	66	57	43
Cleft palate and harelip	1	2	2	..	2	1	1	..	..	1
Digestive system	26	16	18	16	11	17	10	18	17	23
Genito-urinary system	2	3	6	9	7	4	7	6	6	7
Bone and joint	..	2	3	1	2	..	4	2	2	2
Unspecified	6	6	15	12	9	17	12	18	15	9
Totals	132	113	155	151	149	130	132	141	123	111
Congenital malformations as a percentage of total infant deaths under one year of age	18·0	17·2	21·5	20·4	20·3	17·2	18·3	21·0	20·6	19·1

* Excluding congenital mental deficiency, hernia, mucoviscidosis.

TABLE LVI

CAUSES OF DEATHS OF PREMATURE (IMMATURE) INFANTS

—	1964	1965	1966
Immaturity unqualified	129	100	113
Ill-defined diseases peculiar to early infancy, with immaturity	46	44	46
Post-natal Asphyxia and Atelectasis, with immaturity	32	32	23
Intracranial and Spinal injury at birth, with immaturity	15	11	14
Other birth injury, with immaturity ..	31	20	17
Neo-natal disorders arising from Maternal Toxaemia, with immaturity	8	6	6
Pneumonia of newborn, with immaturity ..	5	1	5
Haemorrhagic diseases of newborn, with immaturity	1	..	1
Haemolytic disease of newborn, with immaturity	5	5	6
Nutritional Maladjustment, with immaturity	..	..	..
Immaturity with mention of any other subsidiary condition	4	1	1
Umbilical Sepsis, with immaturity ..	..	1	..
Other Sepsis of newborn, with immaturity	..	..	1
Diarrhoea of the newborn, with immaturity	1	1	..
Totals	277	222	233
Total under one year, with immaturity ..	277	222	233
Total under one month, with immaturity	276	221	233

TABLE LVII

ACCIDENTAL DEATHS OF CHILDREN (AGED 1 AND UNDER 15 YEARS)

—	1961		1962		1963		1964		1965		1966		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Road Accidents	16	19	26	12	25	10	23	16	35	14	20	28	244
Firearms	1	..	4	3	2	1	5	2	5	..	5	..	28
Drowning	18	3	13	4	19	5	23	10	19	4	14	3	135
Falls	..	..	3	..	..	2	1	1	4	1	2	3	17
Other Accidents	31	4	27	14	26	11	17	9	24	12	25	13	213
	66	26	73	33	72	29	69	38	87	31	69	47	640
Totals	92		106		101		107		118		116		640

Accidental deaths of children in this age group numbered 116 in 1966 compared with 118 in 1965 and an average of 102 in the ten years 1957 to 1966 inclusive. The total deaths of children in this age group from all causes were 321 of which 36·1 per cent. were caused by accident.

TABLE LVIII

MAJOR CAUSES OF DEATHS UNDER 1 YEAR AS A PERCENTAGE OF ALL CAUSES—YEARS 1957–1966 INCLUSIVE

Year	Prematurity	Congenital Malformations	Birth Trauma	Post-natal Asphyxia and Atelectasis	Pneumonia (excluding Pneumonia of Newborn)	Erythroblastosis	Pneumonia of Newborn	Gastro-enteritis and Colitis (including Diarrhoea of Newborn)	Neo-natal Diseases from Maternal Toxaemia	Accidents and Violence
1957	22·4	18·0	14·6	7·9	7·4	3·3	3·7	2·4	1·4	3·0
1958	21·6	17·2	16·4	9·3	6·7	3·2	2·6	2·3	1·4	2·1
1959	17·5	21·5	14·7	9·4	6·2	2·9	2·5	2·9	1·0	3·3
1960	19·6	20·4	14·9	10·1	5·1	2·4	2·4	3·6	2·4	2·2
1961	20·1	20·3	13·6	10·6	6·5	2·9	2·2	2·9	1·0	2·2
1962	17·6	17·2	11·8	13·4	6·1	2·8	3·1	3·6	1·3	3·4
1963	20·4	18·3	12·3	8·6	9·1	2·6	3·2	9·4	0·7	1·9
1964	19·8	21·0	12·5	8·5	8·3	2·1	2·1	8·8	1·3	2·4
1965	16·9	20·6	11·4	10·7	6·9	1·8	3·0	8·5	1·7	4·0
1966	19·6	19·1	11·5	7·7	9·3	3·1	2·4	4·3	1·5	2·8

ANTE-NATAL SECTION

During the year, 901 new mothers attended the ante-natal clinics held at Caboolture, Inala, Fortitude Valley and Woolloongabba. A further 405 new patients attended at Moorooka and Chermside where the clinics are conducted by Dr. Holmes and Dr. Jackson (employed by the Brisbane Women's Hospital).

Of the 901 mothers, a total of 480 returned for post-natal examination. A total of 848 Papanicolau smear tests for carcinoma of the cervix were taken for examination by the Cervical Cytology Laboratory at the Brisbane Women's Hospital. Seventeen smears showed atypical cells and 3 of these showed definite evidence of malignancy. All three have been referred for further treatment. One of the patients was aged 21 years and was pregnant for the first time.

During 1966 there were 96 primigravida attending the Valley ante-natal clinic who were confined during the year. Of these, 50 were married and 46 were unmarried. Table LIX analyses the details of their pregnancies. It is interesting to note that the incidence of hospitalisation for pre-eclampsia was approximately the same in the two groups, although a greater percentage of unmarried mothers had diastolic blood pressures of over 90. In the unmarried group, the strain of being pregnant was probably responsible for this; it was interesting to note that the blood pressure at the first visit was elevated in many of this group and that it had settled by the second visit.

The increased incidence of morning sickness in the married group could be accounted for by the earlier initial visit made by this group (18 weeks of gestation as compared to 27 weeks of gestation).

Where exact details of the duration of the pregnancy were unknown, the average duration of pregnancy was determined—281 days in the married mothers, 282 days in the unmarried group.

TABLE LIX

ANALYSIS OF THE PHYSICAL FINDINGS IN 96 PRIMIGRAVIDA ATTENDING THE FORTITUDE VALLEY ANTE-NATAL CLINIC, 1966–67

—	Married		Unmarried	
	Number	Percentage	Number	Percentage
Total Number	50	..	46	..
Post Natal Examination	27	54	4	9
Not pregnant	1	2	..	..
Miscarriage	2	4	..	..
Still Birth	1	2	..	..
Multiple Pregnancy	1	2	1	2
Caesarean Section	..	..	1	2
Haemoglobin under 13·0 gms/100 mls.	30	60	27	58
Haemoglobin under 10·6 gms/100 mls.	..	..	3	6
Morning Sickness	15	30	4	9
Urinary tract infection	1	2	2	4
Vaginal discharge	2	4	6	13
Diastolic blood pressure over 90	13	26	18	40
Toxaemia requiring hospitalisation	9	18	10	21
Positive Papanicolau smear	1	2	..	..
Average age	19 years		18 years	
Period of gestation at first visit	18 weeks (44)		27 weeks (33)	
Duration of pregnancy	281 days (36)		282 days (33)	

The numbers in brackets represent the total from whom sufficient detail was obtained to calculate the period of gestation at the first visit and the duration of pregnancy.

TABLE LX

SUMMARY OF ANTE-NATAL PATIENTS

—	Papanicolau Smears	New Patients	Subsequent Visits	Post-natal Examination	Transfers	Total
Caboolture	34	36	255	30	..	321
Chermside	..	207	1,420	136	3	1,766
Fortitude Valley	222	230	1,669	99	2	2,000
Inala	366	321	2,441	209	20	2,991
Moorooka	..	198	1,235	108	9	1,550
Woolloongabba	226	314	2,297	142	3	2,756
Total	848	1,306	9,317	724	37	11,384

ANTE-NATAL CORRESPONDENCE

Circular letters forwarded to Expectant Mothers (No. 1)	629
Circular letters forwarded to Expectant Mothers; re "The Expectant Mother" Book (No. 2)	1,955
Response to Circular letters	1,961
Serial letters sent to Expectant Mothers	14,953
Letters received from Expectant Mothers	803
Special letters of advice sent on request	615
Copies of "The Expectant Mother" Book sent on request	2,234
Requests from country centres and hospitals for "The Expectant Mother" Book	4,015
Copies of "Before and After—the Facts and Functions of Child Birth" sent on request	2,382
Requests from country centres and hospitals for copies of "Before and After—the Facts and Functions of Child Birth"	850
Copies of Baby patterns sent	228
Copies of Maternity Belt patterns sent	9

CORRESPONDENCE SECTION

Postnatal Correspondence has been offered to all mothers whose address suggests there could be difficulty in attending a Maternal and Child Welfare Centre.

There have been more Birth Notifications sent from centres, enabling us to contact more mothers. As a result there has been an increase in the number of mothers receiving advice on feeding care and management.

Number of telephone calls have increased. Mothers find this of great assistance when unable to attend or contact a Centre, especially noticeable from outiside zones where cheaper rates for long distance calls.

Letters of advice have been forwarded to mothers residing in Northern Territory, New Guinea, Pacific Islands and Mission fields.

We have been pleased to welcome country mothers who have found time to call here during a visit to Brisbane.

Final year students completing General Nursing training, Social Welfare students, and guests from other lands have visited this Section.

	Year ending 30-6-67	Year ending 30-6-66
Number of Birth Notifications received	2,624	2,310
Number of Circulars posted—		
(1) Within reach of a Centre	688	647
(2) Not within reach of a Centre	1,597	1,535
Letters to Correspondence in response to Circular No. 2)	499	490
Letters of advice re feeding and management sent on request	1,777	1,716
Total Number of "Care of Mother and Child" given	705	799
Number of pamphlets sent advising immunisation	2,391	2,188
Number of Birthday Cards sent during the year	254	299
Number of Telephone calls re feeding and management	889	749

TABLE LXI

MOTHERCRAFT HOMES

	Admissions		Daily Average	
	Mothers	Babies	Mothers	Babies
St. Paul's Terrace	70	257	1·9	13·7
Clayfield	59	192	2·1	11·5
Ipswich	90	114	2·9	9·3
Rockhampton	30	138	1·2	10·1
Toowoomba	37	118	1·2	9·3

SANDGATE HOME

Main Home

The year commenced with 53 children in residence. Admissions during the year totalled 717; these were made up as follows:—

Girls under 5 years	92
Girls 5-10 years	218
Girls over 10 years	26
Total Girls	336
Boys under 5 years	110
Boys 5-10 years	249
Boys over 10 years	22
Total Boys	381

Total number of days spent in the Home by children	14,836
Average duration of each child	20·69
Yearly daily average	40·69
Total number of families admitted	296
Families returned once during the year	26
Families returned twice during the year	2
Number of children transferred to Hospital	7
Number of children returned from Hospital	6

Baby Home

The year commenced with 15 children in residence Admissions during the year totalled 199.

Total number of days spent in the Home	4,347
Daily average	11·9
Average duration of residence for each child	21·9
Number of children sent to Hospital	4
Number of children returned from Hospital	3

This report would not be complete without reference to the untimely death of Miss Makins on 13th December, 1966. Miss Makins was attached to the Sandgate Home from 9th June, 1953 to 13th December, 1966, and for the greater part of that time was Matron. She was a wonderful person, extremely competent and beloved by both children and staff. She is greatly missed.

TABLE LXII

SOCIAL SERVICE SECTION

	1966–67	1965–66
Social Service Visits	5,169	4,763
Number of newborns visited in Home	816	674
Number of newborns visited in Brisbane Women's Hospital, Corinda, Boothville, Redcliffe and Cleveland Maternity Hospitals	8,677	8,587
Number of test feeds given	49	43

The following are the titles of the articles of topical interest which have been forwarded each month to 60 newspapers throughout the State—

Night Terrors
Is it stealing?
Understanding your child
Crossing the street safely
Safety in the holidays
How should children spend the school holidays?
Why should I breast feed my baby?
Baby's weight
Buying shoes for your toddler
Is your child bandy?
Does your child always have a runny nose?
Does your child squint?

TABLE LXIII

ANALYSIS OF NEW PATIENTS SEEN AT THE CENTRES

	1964–65	1965–66	1966–67
Infants—			
Under one year	22,765	23,060	23,890
One to two years	6,562	6,596	6,683
Over two years	2,182	2,111	2,116
Total Infants	31,509	31,767	32,689
Expectant mothers	1,894	2,464	2,362
Total new cases	33,403	34,231	35,051

TABLE LXIV

VISITS TO NEWBORNS, SUBSEQUENT AND TOTAL VISITS

Year	Visits to Newborns	Subsequent and other Visits	Total Visits
1964–65	28,803	1,828	30,631
1965–66	28,757	1,265	30,022
1966–67	29,087	1,425	30,512

TABLE LXV

TOTAL ATTENDANCES OF INFANTS AND CHILDREN AND EXPECTANT MOTHERS

1964–65	1965–66	1966–67
451,951	457,956	457,787

DIVISION OF SCHOOL HEALTH SERVICES

Chief Medical Officer: G. M. S. May, M.B., B.S. (Melb.), B.Sc.
Medical Officer: V. M. O'Hara, M.B., B.S. (Syd.)
Chief Dental Officer: D. Phillips, L.D.Q.

STAFF

After many years of dedicated service, the Chief Dental Officer, Mr. T. D. Pugh, retired from duty. Following his arrival from England, he joined the Department of Public Instruction in 1927 as a Dental Inspector and later, as Dental Officer in School Health Services, covered the vast area of the State, gaining mature experience which fitted him for appointment to Chief Dental Officer in 1957. His valuable contribution to the dental health of Queensland school children will always be remembered. Mr. D. Phillips has been appointed to this position following extensive experience as a School Dental Officer.

The medical staff comprises the Chief Medical Officer, School Medical Officer, and a part-time Medical Officer at Ipswich.

The number of pupils in the metropolitan area examined by medical officers has been reduced from 6,973 to 2,491 due to the increase in the number of teacher trainees and the many additional requirements of the amended certificate for Public Service entrance.

In the past year, some districts were without sisters for varying periods which is reflected in the decrease in the number of children examined. At present, only one district is without a School Sister and it is anticipated that an appointment will soon be made, so that every primary State school and Convent school will be again visited.

A number of large new primary schools have been opened, while many small one-teacher schools have been closed, the children being transported to larger schools nearby. More Mission schools have been transferred to the Education Department. The primary school population continues to increase and in October 1966 was 197,492. The predicted number for 1967 is 200,900. These children are examined twice and often three times during their school life. Further testing of vision and hearing has been commenced in their high school period. Approximately 33,000 children attend private schools.

SCHOOL VISITS

In this period, 27,623 children attending schools in the metropolitan area were fully examined by sisters and a further 15,989 for vision only, a total of 43,612. In country districts the number fully examined was 56,461 while a further 8,925 had tests of vision, totalling 65,386, a decrease of 15 per cent. A total of 108,998 children in the whole State were examined, including schools in the far west, Gulf and Cape York areas.

TABLE LXVI

Details of Routine School Health Services Examinations

——	Metro-politan	Country	Total
Number examined fully	27,623	56,461	84,084
Number examined vision only ..	15,989	8,925	24,914
Total number examined	43,612	65,386	108,998
Number examined by Medical Officers	2,491	1,182	3,673
Number examined for colour vision	10,891	17,821	28,712
Children with defects notified ..	1,666	3,331	4,997
Defects notified	1,771	3,847	5,618
Defects notified (non-urgent) ..	218	1,333	1,551
Colour vision defects notified ..	345	687	1,032
Total defects notified	2,334	5,867	8,201
Colour vision defects (mild) ..	197	167	364
Dental defects notified by Sisters ..	469	1,628	2,097

Altogether 8,201 disabilities were brought to the notice of parents. These comprised 5,618 defects requiring early attention and 1,551 to be discussed with their medical adviser on the next visit. In addition parents were advised that 1,032 children had strong colour vision defects which may be a disadvantage in certain occupations.

TABLE LXVII

Response to Notifications

——	Sought Treatment	Promise	Left School	Nil Action	Total
Metropolitan	1,251	33	44	232	1,560
Country ..	2,956	74	74	432	3,536
Total ..	4,207	107	118	664	5,096

The response to notifications follows a similar trend to the recent years.

TABLE LXVIII

Details of Defects Notified

——	Metro-politan	Country	Total
Visual defects notified	973	1,515	2,488
Squints	139	270	409
Other eye defects	41	149	190
Tonsil enlargement	13	150	163
Groin and scrotal swellings ..	98	233	331
Postural defects	63	148	211
Lower limb defects	29	94	123
Other defects (skin, &c.)	83	809	892
Heart murmurs	23	4	27

Errors of visual acuity, either unsuspected or mal-corrected are the most frequent defect found. In primary school children 2·9 per cent. have a visual defect. At high schools, 7·4 per cent. of pupils in grades X to XII showed a refractive error, and 9·3 per cent. of teacher trainees—one stage further in educational level—had visual defects requiring attention. Latent and manifest squints, as revealed by cover tests, again totalled over 400. The reports returned from eye defect notifications are being studied, primarily to assess the incidence of amblyopia.

Postural defects notified totalled 211, more occurring in the country than in metropolitan schools. In addition to those notified minor postural defects are often discovered during examination. These do not need medical attention and are readily corrected under the supervision of physical education teachers and parents.

Over the past fifteen years, the notification of tonsillar enlargement or infection has shown a marked change. In 1951-52 tonsillar notifications (1,711) outnumbered defective vision (1,249) in 81,691 children examined and two years later had fallen below the number of visual defects. On resuming examinations after the Salk campaign (1959), tonsillar notifications were 40 per cent. of the number of visual defects and in keeping with the policy in current medical practice, have decreased considerably to 163 or 3·3 per cent. of all notifications, or an incidence of 0·2 per cent. Early and effective treatment of throat infections with antibiotics has virtually eliminated the chronic tonsillitis of the past.

TABLE LXIX

Audiometry

——	Metro-politan	Country	Total
Number tested with Audiometer ..	31,754	45,982	77,736
Number tested whisper	364	10,552	10,916
Hearing loss notified	309	475	784
Referred to C.A.L.	78	1	79

The loan of additional puretone audiometers by the Commonwealth Acoustic Laboratory has been most beneficial in accurately determining hearing loss throughout all districts in the State. This year 77,736 children have been tested, an increase of 9,147. Hearing loss above 40 db. in either ear was found in 1·03 per cent. of children examined. Children with more severe or bilateral losses were referred to the Commonwealth Acoustic Laboratory for further specialised testing and specialist opinion. Audiometry has now been extended to State High Schools and of 271 pupils examined, three required notification and four had a hearing loss already supervised by the Commonwealth Acoustic Laboratory. Eleven senior students who anticipated teaching scholarships were examined and had normal hearing. In the third term, more attention will be concentrated on this aspect, so that applicants can meet the hearing standards set for teacher trainees.

The Head Master of the Church of England Grammar School again requested the examination of vision and hearing of pupils in the primary grades. Visual acuity tests were given to 394 boys and 156 were tested audiometrically, revealing one boy with a unilateral hearing loss, and 7 visual defects requiring further investigation. These comprised four day boys and four boarders whose parents were notified.

TABLE LXX

INTERVIEWS AND REFERRALS

—	Metro-politan	Country	Total
Interviews by Sisters—			
(*a*) at schools	364	761	1,125
(*b*) at homes	123	150	273
(*c*) total	487	911	1,398
Referred to Social Worker	30	14	44
Referred to Bush Children's Health Scheme	0	129	129
Referred to Guidance and Special Education Branch	46	3	49
Referred to Welfare and Guidance—			
(*a*) Office referrals	217	..	217
(*b*) Direct referrals	41	14	55
(*c*) Total	..	..	272

In addition to interviews with parents at schools, sisters have made many home visits to discuss their child's disabilities, behaviour or social problems. Twenty-three children attended the School Health Services' Office, mostly from country centres, to see the Chief Medical or School Medical Officer. In the metropolitan area, 308 parents were offered and accepted appointments to discuss their children, who had displayed emotional or behavioural disturbances. Two medical officers from the Division of Welfare and Guidance attended for these interviews and of these, 217 parents with their children were advised to attend the Welfare and Guidance Clinic for further guidance. Seventy-five were referred to their own private doctors and the remainder were offered advice only. This has been a successful introduction and is greatly appreciated by the parents assisted.

The Chief Medical Officer is honorary medical officer to several School Sports' Associations. All primary and secondary sports' teams travelling interstate attend for a medical examination for fitness to participate in the sports' carnivals.

COMMUNICABLE DISEASES

Apart from infectious hepatitis, the incidence of communicable diseases is not a major problem. Improved therapy and widespread inoculation has contributed to this. From questionnaires to parents it was learned that 94 per cent. of children in Grades I and II have had diphtheria immunisation, 63 per cent. having a booster dose, while 92 per cent. have received tetanus immunisation with 65 per cent. receiving their booster dose. Those completing poliomyelitis (Salk) courses totalled 89 per cent., while 32 per cent. had received smallpox vaccination.

Infectious hepatitis was responsible for 229 notifications among school children in 1958-59. There was a steady further increase to 328 in 1961-62 and 557 in 1963-64. In the current period, 151 notifications of metropolitan, and 227 of country primary school children, totalling 378, were received. Emphasis on handwashing has been made and several Parents' and Citizens' Committees have purchased and installed dispensers of liquid soap for use by the children.

Tetanus inoculations were continued at the Queensland Agricultural College, Gatton.

HYGIENE AND SANITATION IN SCHOOLS

School Sisters carry out careful inspections of school buildings, classrooms, and facilities, to ensure a healthy environment. A comprehensive report of each school is submitted and any undesirable features are referred to the Education Department which takes prompt steps to rectify such faults, subject to available finance.

HEALTH EDUCATION

The old "Subject Health" book has been replaced by a revised edition in three volumes for lower, middle, and upper grades, renamed "Health Education". The new methods of teaching this subject are excellent and sisters give further individual health education when examining the children.

Health education of aboriginal children is being studied by the Chief Medical Officer, involving a new method of visual presentation. At Cherbourg, this appeared to be satisfactory and an improved presentation at Woorabinda later revealed a 50 per cent. improvement in knowledge of the subject covered. After correcting some minor faults which were revealed, further study of this method will then permit a full report to be submitted.

The Chief Medical Officer supervised discussions on health topics among teacher trainees attending the National Fitness Camp at Tallebudgera which was arranged by the Physical Education Department.

SURVEYS

The longitudinal study of heights and weights of a selected group of children is continuing.

Following a request by members of the Beaudesert Jaycees, a survey of Beaudesert school children was carried out to determine the incidence of urinary abnormalities. Of 1,190 children tested, none were found to have glycosuria while 64 revealed albuminuria and were referred to their own doctors. Of these, 59 were considered due to physiological causes, and five were referred for more detailed investigation.

A research worker of the University of Queensland is attempting to assess the incidence of speech defects in Queensland among the Grades I and II pupils of State schools and Convent schools. School Sisters have carried out a pilot study in a group of schools, using tape recorders loaned for this purpose. From the tape recordings and follow-up studies, it is hoped to make a detailed diagnosis of the lecture are recorded and included in a bulletin distributed to all sisters, including those in country districts.

LECTURES AND VISITORS

Monthly lectures to School Sisters began in first term. A specialist in some aspect of School Health work is invited to talk and discuss the subject chosen. The essential features of the lecture are recorded and included in a bulletin distributed to all sisters, including those in country districts.

The Chief Medical Officer and the Officer-in-Charge of the Commonwealth Acoustic Laboratory visited the South Burnett branch of the Australian Medical Association to meet local practitioners. The functions of School Health Services as it related to medical practice, and of clinical audiometry, were explained and discussed. Subsequent results following notifications have shown the great value of this liaison.

Small groups of final-year medical students study School Health Services each year and present a paper to a seminar of students on this topic. First-year University students in Social Studies attend to learn the functions of this service. One Fijian and seven African senior educationists requested a seminar-type discussion with the Chief Medical Officer following their meeting with a School Sister working at a school. They expressed profound interest in both the medical and dental aspects of School Health Services.

TEACHER TRAINEES

More emphasis is being placed on the early detection of conditions, both physical and emotional, which cast doubt on the suitability of applicants for teachers' scholarships. This is valuable because an increasing number of trainees must be fully examined, while at the same time there has been no increase in the medical staff. The School Medical Officer was fully occupied more than six months of the year with these routine medical examinations.

Measures taken to avoid unnecessary departmental expense due to failure on medical grounds after the academic year started were as follows:—

1. The Department of Education was requested to add to the application form for teachers' scholarship specific questions on vision and hearing.

2. The Staff Inspector (Primary) of the Department of Education and the School Medical Officer scrutinized thousands of applications for any history of suspected or known disability.

3. From these, the parents of 65 applicants were requested to permit School Health Services to obtain clinical notes of the previous medical history. Table LXXI shows the conditions which were investigated in this way.

   Of these, 13 (20 per cent.) were advised to seek some other occupation. The reasons for their failure were—hearing loss 9; speech defect 2; cerebral pathology 1; schizophrenia 1.

   This preliminary screening allows rejected students to apply for other positions or scholarships.

4. During the first few weeks of the academic year, School Sisters tested all students at the Colleges with a puretone audiometer for unsuspected hearing losses. A total of 40 were referred to the Commonwealth Acoustic Laboratory for further investigation.

TABLE LXXI

INVESTIGATION OF APPLICANTS FOR SCHOLARSHIPS

History	Females	Males	Total
Asthma	2	1	3
CNS defect	3	4	7
CVS defect	6	1	7
Hearing loss	6	12	18
Kidney disease	2	2	4
Nervous disorder	2	2	4
Orthopaedic defect	6	1	7
Speech defect	3	4	7
Miscellaneous	4	4	8

In 1967, 1,629 teacher trainees were fully examined. This is a further increase of 285. Of those finalised, seven have been rejected as medically unfit (deafness three; psychiatric causes 2; cerebral pathology 1; pregnancy 1). A decision regarding the fitness of four students has been deferred from six to twelve months while treatment is being effected. Reports of investigations from various specialists are still required before 233 certificates can be finalised, compared with 30 which were outstanding at this period in 1966.

This enormous increase in the number awaiting reports is due to the revised medical examination form which requires a report from an ophthalmologist if vision is less than 6/18 in either eye. At present, eye reports are outstanding for 103 students and medical examinations were only completed at the end of June.

TABLE LXXII

TYPE AND INCIDENCE OF DEFECTS FOUND AMONG TEACHER TRAINEES

Type	No. Referred	No. Not Referred	Total
Maladjustment	3	45	48
Asthma	1	49	50
Defective vision	162	374	536
Dental caries	531	..	531
E.N.T. conditions	4	31	35
Genito-urinary Conditions	23	29	52
Hearing loss	58	..	58
Heart murmur	11	7	18
Hernia	5	..	5
Hypertension	10	..	10
Orthopaedic	21	159	180
Other eye conditions	..	30	30
Overweight	35	..	35
Pigmented moles	21	2	23
Skin conditions	20	43	63
Speech defects	11	10	21
Miscellaneous	48	21	69

Dental caries was again the most commonly found defect and 33·3 per cent. of all students required some form of dental treatment. Defective vision notified (9·3 per cent.) included unsuspected defects and known defects requiring rechecking. An interesting development this year was the detection of four students with keratoconus (conical cornea) which has not been detected previously. This resulted from the opthalmologist's reports requested for the first time.

Defective hearing is the next most commonly notified condition, and it is surprising that despite the specific question in the Department of Education's application form, 40 students above those who admitted to some auditory difficulty required referral to the Commonwealth Acoustic Laboratory. Of the total 58 students referred, 12 were outside the standards set down. (Of the total number tested, 3·5 per cent. had some degree of hearing loss, although only 0·7 per cent. were rejected as unfit.)

Orthopaedic defects were again quite common, but only 21 students needed referral. Of the 138 such defects, scoliosis was present in 29 students.

More speech defects were referred for assessment this year. Three were failed (one with a psychiatric disturbance) while 8 are undergoing speech therapy with a good prognosis.

More students were referred to the Psychiatric Clinic this year. This is in part due to a more detailed assessment during the medical examination and also because attendance at the Clinic is becoming more acceptable to the student. The Principals and staff of both Colleges are more cognisant of the help available at the Clinic and in some cases the students themselves request referral.

Close liaison is also maintained with the Student Health Service at the University of Queensland—not only because there are special University scholarship holders, but also many trainees do part-time University study at night.

Throughout the latter six months of 1966 and now resumed in 1967, regular monthly clinics are held at both Colleges for students who seek medical advice. Once again students were encouraged through the Principals and staff to make appointments when necessary at this office after school hours. Although these clinics are essentially advisory, 257 students were seen, 39 being referred for further investigation, 15 to the Psychiatric Clinic, and the remainder advised and/or reassured.

This year 16 teachers have been re-assessed for superannuation purposes as their attendance record during training had been poor.

SCHOOL DENTAL SERVICES

A marked decrease in dental staff has resulted through retirements and resignations.

With a complement of thirteen dentists which is eight below the normal establishment, four dental districts were left vacant whilst Rail Dental Clinics operated with only one officer.

A depleted staff continued to give a valuable dental service to children throughout the widely scattered areas of this State. Between Daintree in the north and Eulo and Thargomindah in the south-west, 10,489 children received dental treatment.

Another service rendered by School Dental Officers was the assistance given to the Queensland Epidemiological Survey. Four officers were included in the team of examiners with one member acting as co-ordinator. Sixteen schools were visited for survey purposes.

In the field of preventive dentistry, emphasis is given to oral hygiene through group and individual instruction, aided by the screening of suitable films.

Oral examinations reveal that the D.M.F. (diseased, missing and filled permanent teeth) average 2·9 per child, whilst the d.f. (temporary teeth rate) is 2·3, giving a total of 5·2 per child.

TABLE LXXIII

ANALYSIS OF INCIDENCE OF DENTAL DEFECTS

Number of Children Examined—27,515

——	Diseased	Filled	Missing	Total
D.M.F.	33,799	42,483	5,661	..
Average per child	1·2	1·5	0·26	2·96
d.f.	40,501	23,634	..	..
Average per child	1·43	0·85	..	2·28
			Total	5·24

Of those examined, 8,525 had sound mouths. Those under regular dental care numbered 19,699.

The average number of teeth treated per child was 2·7, whilst 3·2 fillings and 0·66 extractions was the amount of operative work per patient.

The ratio of extractions to filling is one (1) extraction to 4·7 fillings.

TABLE LXXIV

DETAILS OF SCHOOL DENTAL EXAMINATIONS

Number of children examined	27,515
Number of children under regular dental care—	
(*a*) Clinic	866
(*b*) School Dental Officer	9,685
(*c*) Private Dentist	9,148
Number with sound mouths—	
(*a*) Natural	2,070
(*b*) Operatively restored	6,455
Carious teeth savable (permanent)	31,258
Carious teeth unsavable (permanent)	2,541
Temporary teeth carious	40,501
Permanent teeth lost or extracted	5,661
Six-year molars extracted	4,837
Permanent teeth filled	42,483
Temporary teeth filled	23,634
Percentage of children with dirty mouths	10%
Total Number of defective permanent teeth	33,799
Average Number of defective permanent teeth per child	1·2

TABLE LXXV

DENTAL TREATMENTS

Number of schools visited	401
Number of children examined	27,515
Number of children treated	10,489
Number of permanent extractions	766
Number of temporary extractions	6,170
Number of fillings	32,896
Number of teeth treated	28,794
Number of operations	71,619

DIVISION OF PSYCHIATRIC SERVICES

Director of Psychiatric Services: G. S. URQUHART, M.B., B.S. (Qld.), D.P.M. (Melb.)

Medical Superintendent, Brisbane Special Hospital: O. E. ORFORD, M.B., B.S., D.P.M.

Medical Superintendent Toowoomba Special Hospital: J. H. B. HENDERSON, M.B., B.S. (Syd.)

Medical Superintendent, Ipswich Special Hospital: R. A. ATHERTON, L.R.C.P. (Edin.); L.R.C.S. (Edin.); L.R.F.P.S. (Glasgow)

Psychiatrist, Psychiatric Clinic: I. W. W. CHARLES, M.B., B.S. (Melb.), D.P.M. (Melb.)

Visiting Medical Officer, Mosman Hall, Charters Towers: I. CSEREY, M.B., B.S. (Melb.) to 14-1-67, and J. J. PATTEN from 11-2-67

Administration Officer: H. J. SPARKS

Superintendent, Epileptic Home: K. T. FLYNN

The Division of Psychiatric Services as a whole has shown substantial progress in its goal to provide for growing community needs. The public hospital system in Queensland has again increased its activity in the field of care for patients requiring outpatient and relatively short-term inpatient care. There has been some increase in the number of beds available in general hospitals during the year and of even more significance there has been an increase in the number of psychiatrists available for sessional work in these hospitals. Active units under the care of experienced psychiatrists are now functioning in Townsville, Rockhampton, Bundaberg, Maryborough and Toowoomba, as well as at the Royal Brisbane and Chermside Hospitals.

These public hospital units will continue to play an increasing role in the treatment of psychiatric illness. The special hospitals and institutions and clinics under the direct control of this Division are being developed to meet the increasing demand for services which cannot be met by the public hospital system. While it is in these fields that much progress has been made during the last twelve months the movement towards providing modern psychiatric facilities for all forms of mental illness has also been substantial in the Brisbane and Toowoomba Special Hospitals.

MENTAL HEALTH STATISTICS

Although there has been a rise in the number of admissions to special hospitals this rise has been significant only in male admissions to the Brisbane Special Hospital. There are two factors which are likely to have a bearing on this increase. The first is that females occupy considerably more beds in the general hospital units than do males. The second striking feature which is discussed later in the report is the marked rise in the number of persons, males in particular, who have been admitted for treatment of alcoholism.

Despite the rise in admission rate the average number daily resident shows a further progressive decrease. This is due to a remarkable rise in the number of discharges from the Brisbane Special Hospital and to the shorter stay of admitted patients. Reference to the length of residence tables shows that 7 out of 10 patients admitted each year continue to be discharged within that year. A very significant rise in the number and proportion of patients admitted informally to the Brisbane Special Hospital is evident and the maintenance of the previously high rate at the Tooowomba Special Hospital is noted.

THE INTELLECTUALLY HANDICAPPED

The most notable single event of the year was the opening of the Training Centre for Intellectually Handicapped Adults. This modern attractive and highly functional unit was opened by the Hon. the Minister for Health, Mr. S. D. Tooth, on 5th October, 1966. The centre provides for 40 male handicapped persons with a potential for social competence. In this setting of first-class hostel accommodation they will continue their formal education and learn industrial and social skills. Particular attention has been paid to the staffing of the Unit. The nursing staff provide both father and mother figures, two special teachers are full-time staff members and there are part-time services by psychologists, social worker and industrial manager. The goal of the Unit is to prepare these handicapped persons for sheltered accommodation and employment in the community.

Some progress has been made in the segregation of intellectually handicapped from the mentally ill within the special hospitals. Progress in this programme has been retarded because of lack of professional staff. However, much of the preparatory work has been done and the effect of this work will become evident within the next twelve months.

The Training Centre for Intellectually Handicapped Children has seen vast improvements mainly due to co-operation between the nursing staff, school teachers and visiting groups. The effective integration of the community's resources in this way has been an outstanding success. The girls and young boys section has been decorated by the staff with coloured bedspreads and curtains and partitioning screens and lockers have been provided. The vinyl tiling of the floors has added greatly to the appearance and comfort of the ward. The new school building is maintaining interest and excitement of all involved in the children's welfare.

Programming for the upgrading of the Ipswich Special Hospital has proceeded and it is proposed that the whole of this hospital will become a centre for the training and special care of the intellectually handicapped.

At both the Brisbane and Toowoomba Special Hospitals programmes for the treatment of special groups of patients have been developed. At the Toowoomba Special Hospital special attention has been given to the female psychoneurotic patient as this type of patient constitutes a considerable proportion of the informal admissions and re-admissions. It is accepted that periodic admissions are often necessary in this group so that they can be given relief from distressing environmental situations which precipitate or aggravate their illness. On the other hand many of the informal male admissions are associated with alcoholism and if they relapse after treatment they are referred to special centres in Brisbane rather than being readmitted.

At the Brisbane Special Hospital resocialisation programmes have been introduced for the patient who is pathologically dependent on the institution. Activity centres have been set up by the occupational therapists and in association with the nursing staff and visiting groups a 7-day week programme is being energetically pursued.

Industrial therapy is firmly established. From its small beginning in July, 1966, with 6 patients and a few contracts it has expanded rapidly to over 100 patients and varied contracts. Reference to the length of residence table shows the marked increase in the number of patients discharged who have been in hospital 7 years or more. Industrial therapy is provided by a non-profit Limited Company initially sponsored by the Rocklea Rotary Club. This organisation is moving towards a community sheltered workshop in hostel accommodation.

Preparation of the geriatric patients for discharge to Eventide and other convalescent homes, as well as to their own homes, has been facilitated by admission direct to geriatric wards. Activity in these wards has resulted in an upgrading of the ward and an air of hope and contentment.

So many patients admitted with a psychotic illness are being discharged within a few months that it has become desirable to set up two active treatment areas which admit and treat patients and discharge them without necessity of transfer within the hospital. An additional admission area for alcoholics has also been set up. The hospital continues to lose its closed atmosphere and the two male admission wards are open and the female admission ward is open by day as well.

ALCOHOLISM

The admission rate of persons suffering from alcoholism has more than doubled in the last twelve months. This is an enormous rise, but similar rises occurred in 1963 and again in 1964. The Brisbane Special Hospital has responded by setting up an admission ward and treatment centre. It must be remembered that these patients have proved resistant to, or unsuitable for, treatment facilities provided outside the special hospital. Difficulties do arise in the management of such patients, but the hospital is prepared to work through such difficulties.

Important changes in the administration of the Wacol Rehabilitation Clinic have been implemented and it is anticipated that mutual benefit will be derived from the closer co-operation between that Clinic and the Special Hospitals.

THE CRIMINALLY MENTALLY ILL

The Ipswich Special Hospital has continued to provide for the great majority of male prisoners who require special hospital treatment. The daily average number of prisoners cared for by this Division exceeds 110. Two notable features of this service have been noted during the year. There has been a constant pressure on available beds and referrals from the Prison Service have increased. The other notable feature is the increase in the number of psychopathic personalities that have been referred.

The medical and nursing staff have maintained a high standard of responsible care for these patients who are often both difficult and dangerous. Better designed buildings incorporating a secure custodial perimeter are being constructed, but the urgency of this need cannot be over-rated.

CHAPLAINCY SERVICE

The Department's full-time sponsored service continues to play an important role within the Brisbane Special Hospital, while at the other Hospitals part-time Chaplains continue to provide a valuable service. During this year two of the full-time Chaplains have retired. The Revd. Father J. Hatch has been appointed in the place of Revd. Father Cuneo and the Revd. H. Law is to take up duties in the place of the Revd. R. Whimp. Chaplains have met regularly with the Medical Superintendent and Director. The Chaplains have undertaken an energetic programme of pastoral care within the hospital and in this task have expressed the need for a closer co-operation with the professional staff and an in-service training programme.

RESEARCH ACTIVITY

The Brisbane Special Hospital has conducted a drug trial during the year and this project has stimulated the interest of medical and nursing staff. As a result of this project the patients have benefited from increased observation and the changed atmosphere of a "back ward".

The study of patients over 65 years of age admitted to the hospital has continued and the results of this study are being prepared for publication.

The National Health and Medical Research Council has established a Committee on Mental Health. This action by the Council is a significant step forward in a field which is the greatest public health problem of today's society. It is to be hoped that the Committee will be able to influence the Council to provide research facilities for worth-while projects and advice in the fields of primary prevention and the promotion of positive mental health.

PSYCHIATRIC CLINIC

All aspects of this clinic's functioning have had greater demands made on them during this year. Forensic referrals have increased and it has become necessary to call upon the services of the Brisbane Special Hospital to assist in this field. Of particular importance has been the development of a consulative and referral service by the clinic in association with the St. Vincent de Paul Society. Preventive psychiatry and the promotion of mental health are services much needed in the community and this association has been a successful advance in this field.

It has become necessary to second a medical officer from the Brisbane Special Hospital to the Psychiatric Clinic and it is anticipated that the much needed expansion of professional staffing will be implemented at an early date.

THE EPILEPTIC HOME, WILLOWBURN

This Institution has continued to provide residential accommodation and care for epileptic patients. Difficulty has been experienced in filling the vacancies created by the extensions and renovations completed last year. The effective treatment methods now available for the patient with epilepsy has obviated the need for special units and unless there is a concomitant condition such as intellectual handicap residential care is not sought. It would appear that the time has been reached when consideration of the medical criteria for admission to this Institution should be reviewed.

TABLE LXXVI

PATIENT POPULATION

—	Patients Resident at 30th June, 1966			Patients Resident at 30th June, 1967		
	Males	Females	Total	Males	Females	Total
Brisbane Special Hospital	1,050	632	1,682	1,032	582	1,614
Toowoomba Special Hospital	564	440	1,004	524	400	924
Ipswich Special Hospital	307	284	591	303	279	582
Mosman Hall, Charters Towers	229	..	229	222	..	222
Totals	2,150	1,356	3,506	2,081	1,261	3,342

TABLE LXXVII
QUEENSLAND SPECIAL HOSPITALS
Showing Admissions, Re-Admissions, Discharges and Deaths during the Year Ended 30th June, 1967

—	Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Females	Totals	Males	Females	Totals	Males	Females	Totals	Males	Males	Females	Totals
On the Books of the Hospital on 1st July, 1966	**1,203**	**759**	**1,962**	**583**	**492**	**1,075**	**308**	**289**	**597**	**241**	**2,335**	**1,540**	**3,875**
Admitted for the first time—													
Informal admissions	182	88	270	62	79	141	9	20	29	29	281	186	467
Regulated admissions (Sections 18, 19 and 22)	153	104	257	25	13	38	1	1	2	17	196	118	314
Admissions under Hospital Orders	69	57	126	8	6	14	..	..	..	28	105	63	168
Part IV admissions	..	..	..	..	..	..	27	..	27	..	27	..	27
Re-admitted—													
Informal admissions	138	111	249	47	85	132	1	1	2	14	200	197	397
Regulated admissions (Sections 18, 19 and 22)	77	78	155	20	10	30	..	3	3	1	98	91	189
Admissions under Hospital Orders	26	39	65	13	5	18	..	..	..	14	53	44	97
Part IV admissions	..	..	..	..	..	..	2	..	2	..	2	..	2
Total Admissions	645	477	1,122	175	198	373	40	25	65	103	963	700	1,663
Totals on Books and Admissions—All Hospitals	**1,848**	**1,236**	**3,084**	**757**	**689**	**1,446**	**348**	**314**	**662**	**344**	**3,299**	**2,239**	**5,536**
Transferred from Brisbane Special Hospital	..	..	..	15	8	23	26	15	41	1	42	23	65
Transferred from Toowoomba Special Hospital	15	3	18	..	..	..	1	..	1	..	16	3	19
Transferred from Ipswich Special Hospital	20	1	21	..	..	..	..	..	..	..	20	1	21
Transferred from Mosman Hall Special Hospital	3	..	3	1	..	1	..	..	..	..	4	..	4
Transferred from Public Hospitals	2	2	4	..	..	..	..	..	..	..	2	2	4
***Total number under care during the year**	**1,888**	**1,242**	**3,130**	**774**	**698**	**1,472**	**375**	**329**	**704**	**345**	**3,382**	**2,269**	**5,651**
Discharged—													
Regulated	238	302	540	50	52	102	33	29	62	36	357	383	740
Informal patients	330	142	472	101	166	267	..	2	2	40	471	310	781
Total Discharges	568	444	1,012	151	218	369	33	31	64	76	828	693	1,521
Died	77	50	127	34	20	54	17	10	27	12	140	80	220
Total Number Discharged and Died	**645**	**494**	**1,139**	**185**	**238**	**423**	**50**	**41**	**91**	**88**	**968**	**773**	**1,741**
Transferred to Brisbane Special Hospital	..	..	..	15	3	18	20	1	21	3	38	4	42
Transferred to Toowoomba Special Hospital	14	8	22	..	..	..	..	..	..	1	15	8	23
Transferred to Ipswich Special Hospital	26	15	41	1	..	1	..	..	..	..	27	15	42
Transferred to Mosman Hall Special Hospital	..	..	..	1	..	1	..	..	..	..	1	..	1
Transferred to Public Hospitals	..	..	..	..	..	..	..	..	..	..	..	..	..
Total number discharged, died, &c., during year	685	517	1,202	202	241	443	70	42	112	92	1,049	800	1,849
Remaining on Books of Hospitals on 30th June, 1967	**1,203**	**725**	**1,928**	**572**	**457**	**1,029**	**305**	**287**	**592**	**253**	**2,333**	**1,469**	**3,802**
Average Number Daily Resident	**1,035**	**610**	**1,645**	**541**	**421**	**962**	**310**	**277**	**587**	**225**	**2,111**	**1,308**	**3,419**
Number on leave of absence on 30th June, 1967	171	143	314	48	57	105	2	8	10	31	252	208	460
Proportion of number of patients remaining on books to each 1,000 of population as at 30th June, 1967											2·84	1·83	2·34
Proportion of Admissions per 10,000 of population for year ended 30th June, 1967											11·73	8·73	10·32

* These totals include interhospital transfers.

TABLE LXXVIII

BODILY HEALTH AND CONDITION OF PATIENTS ADMITTED DURING THE YEAR ENDED 30TH JUNE, 1967

—	Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Females	Totals	Males	Females	Totals	Males	Females	Totals	Males	Males	Females	Totals
In apparently good health and condition	426	331	757	125	148	273	36	21	57	55	643	500	1,143
In indifferent health and reduced condition	190	116	306	38	45	83	4	2	6	39	271	163	434
In bad health and exhausted condition	29	30	59	12	5	17	..	2	2	9	50	37	87
Totals	645	477	1,122	175	198	373	40	25	65	103	963	700	1,663

TABLE LXXIX

FORMS OF MENTAL DISORDERS IN PATIENTS ADMITTED DURING TWELVE MONTHS ENDED 30TH JUNE, 1967 GROUPED BY SHORT DIAGNOSIS.

Diagnostic Groups	Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Males	Females	Total
1. Senile and pre-senile dementia	11	18	29	12	12	24	..	..	..	6	29	30	59
2. Alcoholic psychosis	17	5	22	5	1	6	..	..	..	5	27	6	33
3. Other organic psychosis	85	56	141	12	9	21	2	..	2	8	107	65	172
4. Schizophrenia and paranoid states	159	168	327	48	42	90	12	..	12	40	259	210	469
5. Depressive psychosis	26	26	52	22	67	89	1	..	1	3	52	93	145
6. Other functional psychoses	..	4	4	..	..	..	1	..	1	5	6	4	10
7. Depressive neurosis	13	25	38	3	28	31	1	..	1	..	17	53	70
8. Other neuroses and psychosomatic disorders ..	12	13	25	17	11	28	..	..	..	..	29	24	53
9. Alcoholism	198	73	271	42	19	61	..	..	..	32	272	92	364
10. Other personality disorders	41	23	64	6	1	7	9	..	9	2	58	24	82
11. Transient situational disturbances and behaviour disorders of children	1	2	3	3	2	5	..	..	..	..	4	4	8
12. Non-psychotic mental disorder associated with physical condition	14	16	30	..	..	..	..	..	..	..	14	16	30
13. Mental retardation	68	48	116	5	6	11	14	25	39	2	89	79	168
Totals	645	477	1,122	175	198	373	40	25	65	103	963	700	1,663

TABLE LXXX

Causes of Death which Occurred during Year Ended 30th June, 1967

Statistical Classification	Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Males	Females	Totals
Infective and Parasitic Diseases—													
002 Pulmonary Tuberculosis	..	..	..	1	..	1	..	..	..	..	1	..	1
Neoplasms—													
151 Malignant neoplasm of stomach	..	..	..	1	..	1	..	..	..	..	1	..	1
153 Malignant neoplasm of large intestine, except rectum—													
(*g*) Intestinal tract, part unspecified	..	..	..	..	1	1	..	..	..	..	..	1	1
162 Malignant neoplasm of bronchus and trachea and of lung specified as primary—													
(*b*) Malignant neoplasm of lung specified as primary	..	..	..	..	..	..	1	..	1	..	1	..	1
163 Malignant neoplasm of lung, unspecified as to whether primary or secondary	..	..	..	4	..	4	..	..	..	..	4	..	4
193 Malignant neoplasm of brain and other parts of nervous system	..	1	1	..	..	..	..	..	..	..	..	1	1
238 Neoplasm of unspecified nature of skin and muscoloskeletal system	1	..	1	..	..	..	..	..	..	..	1	..	1
260 Diabetes mellitus	..	1	1	..	1	1	..	..	..	..	..	2	2
Diseases of the nervous system and sense organs—													
331 Cerebral Haemorrhage	1	..	1	1	1	2	..	1	1	..	2	2	4
332 Cerebral embolism and thrombosis	7	7	14	..	1	1	..	2	2	2	9	10	19
355 Other diseases of brain	..	..	..	2	1	3	7	2	9	..	9	3	12
356 Motor neurone disease and muscular atrophy	..	..	..	1	..	1	..	..	..	..	1	..	1
Diseases of the Circulatory System—													
420 Arteriosclerotic heart disease,	5	1	6	..	..	..	..	..	..	..	5	1	6
(*a*) Arteriosclerotic heart disease so described	1	8	9	1	..	1	1	1	2	..	3	9	12
(*b*) Heart disease specified as involving coronary arteries	18	3	21	..	..	..	2	..	2	..	20	3	23
422 Other myocardial degeneration	..	..	..	..	..	..	..	1	1	..	..	1	1
(*b*) With arteriosclerosis	3	..	3	6	4	10	..	..	..	2	11	4	15
430 Acute and sub-acute endocarditis	..	1	1	..	..	..	..	..	..	..	..	1	1
431 Acute myocarditis not specified as rheumatic	..	..	..	2	..	2	..	..	..	..	2	..	2
434 Other and unspecified diseases of heart	1	1	2	2	1	3	..	..	..	..	3	2	5
440 Essential benign hypertensive heart disease	..	..	..	1	..	1	..	..	..	..	1	..	1
441 Essential malignant hypertensive heart disease	..	1	1	..	..	..	..	..	..	..	..	1	1
442 Hypertensive heart disease with arteriolar nephrosclerosis	..	..	..	1	..	1	..	..	..	..	1	..	1
446 Hypertension with arteriolar nephrosclerosis	..	..	..	1	..	1	..	..	..	..	1	..	1
454 Arterial embolism and thrombosis	..	..	..	3	1	4	..	..	..	..	3	1	4
462 Varicose veins of other specified sites	..	..	..	..	..	..	1	1	2	..	1	1	2
464 Phlebitis and thrombophlebitis of other sites	..	1	1	..	..	..	..	..	..	..	..	1	1
465 Pulmonary embolism and infarction	..	..	..	..	1	1	..	..	..	..	..	1	1
Diseases of the Respiratory System—													
475 Acute upper respiratory infection of multiple or unspecified sites	..	..	..	..	1	1	..	..	..	..	..	1	1
490 Lobar pneumonia	1	3	4	..	1	1	..	..	..	..	1	4	5
491 Bronchopneumonia	6	7	13	6	4	10	1	..	1	..	13	11	24
493 Pneumonia, other and unspecified	20	12	32	..	..	..	1	..	1	7	28	12	40
521 Abscess of lung	..	..	..	..	..	..	1	..	1	..	1	..	1
Diseases of the Digestive System—													
540 Ulcer of stomach	1	..	1	..	..	..	..	..	..	..	1	..	1
543 Gastritis and duodenitis	..	..	..	1	..	1	..	..	..	..	1	..	1
545 Other diseases of stomach and duodenum	..	1	1	..	..	..	..	..	..	..	..	1	1
561 Hernia of abdominal cavity with obstruction	..	..	..	..	1	1	..	..	..	..	..	1	1
578 Other diseases of intestines and peritoneum	..	..	..	..	..	..	1	1	2	..	1	1	2
583 Other diseases of liver	..	1	1	..	..	..	..	..	..	..	..	1	1
586 Other diseases of gallbladder and biliary ducts	1	..	1	..	..	..	..	..	..	..	1	..	1
Diseases of the Genito-Urinary System—													
593 Nephritis not specified as acute or chronic	1	..	1	..	..	..	..	..	..	..	1	..	1
Congenital Malformations—													
752 Congenital hydrocephalus	..	..	..	..	..	..	..	1	1	..	..	1	1
Diseases of Early Infancy													
760 Intercranial and spinal injury at birth—													
(*a*) Without mention of immaturity	..	..	..	..	1	1	..	..	..	..	..	1	1
Senility—													
792 Uraemia	..	1	1	..	..	..	..	..	..	..	..	1	1
Accidents, Poisonings, and Violence—													
874 Accidental poisoning by other analgesic and soporific drugs	1	..	1	..	..	..	..	..	..	..	1	..	1
921 Inhalation and ingestion of food causing obstruction or suffocation	2	..	2	..	..	..	..	..	..	..	2	..	2
922 Inhalation and ingestion of other object causing obstruction or suffocation	..	..	..	..	..	..	1	..	1	..	1	..	1
929 Accidental drowning and submersion	2	..	2	..	..	..	..	..	..	..	2	..	2
974 Suicide and self-inflicted injury by hanging and strangulation	1	..	1	..	..	..	..	..	..	1	2	..	2
Not known	4	..	4	..	..	..	..	..	..	..	4	..	4
Totals	77	50	127	34	20	54	17	10	27	12	140	80	220

TABLE LXXXI

Birth Places of Patients Admitted During the Year Ended 30th June, 1967

—	Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Females	Totals	Males	Females	Totals	Males	Females	Totals	Males	Males	Females	Totals
Queensland	344	314	658	127	149	276	20	24	44	58	548	487	1,035
Other Australian States—													
New South Wales	93	55	148	17	26	43	8	1	9	11	129	82	211
Victoria	24	12	36	7	6	13	2	..	2	1	34	18	52
South Australia	6	5	11	2	1	3	2	..	2	..	10	6	16
Western Australia	2	1	3	..	1	1	..	..	..	1	3	2	5
Tasmania	2	4	6	..	..	..	..	..	..	2	4	4	8
Northern Territory	2	..	2	..	..	..	..	..	..	1	3	..	3
Total Australia	473	391	864	153	183	336	32	25	57	74	731	599	1,330
New Zealand	5	2	7	1	1	2	..	..	..	4	10	3	13
Pacific Islands and New Guinea	..	..	..	..	..	..	..	..	..	1	1	..	1
Great Britain and Ireland	54	33	87	9	5	14	4	..	4	7	74	38	112
Europe (other)	35	28	63	5	4	9	4	..	4	15	59	32	91
Asia—													
China	3	2	5	..	..	..	..	..	..	..	3	2	5
India, Pakistan, Ceylon	..	..	..	1	..	1	..	..	..	..	1	..	1
North America	1	1	2	1	..	1	..	..	..	..	2	1	3
South America	2	..	2	1	..	1	..	..	..	..	3	..	3
Africa	..	2	2	..	..	..	..	..	..	..	..	2	2
Unknown	57	7	64	4	5	9	..	..	..	3	64	12	76
Other	15	11	26	..	..	..	..	..	..	..	15	11	26
Totals	645	477	1,122	175	198	373	40	25	65	104	963	700	1,663

TABLE LXXXII

Districts Whence Patients Were Received During the Year Ended 30th June, 1967

—	Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Females	Totals	Males	Females	Totals	Males	Females	Totals	Males	Males	Females	Totals
Northern and North-Western	23	33	56	..	..	..	10	7	17	101	134	40	174
Central	11	24	35	..	..	..	29	18	47	1	41	42	83
Southern and South-Western	611	420	1,031	175	198	373	1	..	1	1	788	618	1,406
Totals	645	477	1,122	175	198	373	40	25	65	103	963	700	1,663

TABLE LXXXIII

PSYCHIATRIC CLINIC

1st July, 1966 to 30th June, 1967

Consultations

Psychiatric	8,825
Speech Therapy	823
Social Work	1,047
Total	10,695

Patients

Total Number	1,965
New	680

TABLE LXXXIV

BRISBANE SPECIAL HOSPITAL

AGE GROUPS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES OR DEATHS OCCURRED DURING THE YEAR AND THOSE WHO REMAINED ON BOOKS OF HOSPITAL ON 30TH JUNE, 1967

Age Groups	Admissions			Discharges			Deaths			Remaining		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Under 5 years	3	1	4	..	..	..	..	..	..	1	2	3
5 years and under 10 years	17	5	22	1	1	2	..	..	..	40	14	54
10 years and under 15 years	14	14	28	4	2	6	1	1	2	78	51	129
15 years and under 20 years	28	24	52	30	18	48	1	1	2	69	60	129
20 years and under 25 years	45	29	74	56	36	92	..	..	..	66	39	105
25 years and under 30 years	45	41	86	43	33	76	1	3	4	76	41	117
30 years and under 35 years	46	26	72	46	28	74	2	..	2	61	34	95
35 years and under 40 years	52	47	99	46	46	92	2	1	3	107	54	161
40 years and under 45 years	89	64	153	75	60	135	2	..	2	131	78	209
45 years and under 50 years	78	60	138	78	59	137	2	1	3	160	98	258
50 years and under 55 years	62	36	98	50	37	87	4	1	5	129	63	192
55 years and under 60 years	50	27	77	46	21	67	8	1	9	94	76	170
60 years and under 65 years	33	29	62	33	35	68	3	5	8	85	43	128
65 years and under 70 years	14	18	32	23	14	37	8	7	15	55	20	75
70 years and under 75 years	21	18	39	10	16	26	11	7	18	26	18	44
75 years and under 80 years	20	16	36	10	18	28	9	8	17	19	16	35
80 years and under 85 years	23	11	34	11	13	24	15	8	23	3	9	12
85 years and under 90 years	3	8	11	5	3	8	6	3	9	3	6	9
90 years and under 95 years	2	3	5	1	2	3	2	1	3	..	3	3
95 years and under 100 years	..	..	..	..	2	2	..	2	2	..	..	..
Unknown	..	..	..	..	..	..	..	..	..	..	..	..
Totals	645	477	1,122	568	444	1,012	77	50	127	1,203	725	1,928

MARITAL STATUS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1967

Single	333	154	487	334	147	481	22	18	40	885	411	1,296
Married	170	180	350	115	167	282	40	16	56	181	172	353
Separated	50	41	91	44	46	90	1	..	1	66	31	97
Widowed	44	85	129	40	68	108	10	16	26	33	95	128
Divorced	39	17	56	27	16	43	1	..	1	30	16	46
Unknown	9	..	9	8	..	8	3	..	3	8	..	8
Totals	645	477	1,122	568	444	1,012	77	50	127	1,203	725	1,928

LENGTH OF RESIDENCE IN THE HOSPITAL OF THE PATIENTS WHO WERE DISCHARGED OR WHO DIED DURING THE YEAR, AND OF THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1967

Under 1 month	..	..	..	109	66	175	19	9	28	40	29	69
1 month and under 3 months	..	..	..	156	127	283	8	11	19	98	61	159
3 months and under 6 months	..	..	..	84	78	162	16	9	25	95	78	173
6 months and under 9 months	..	..	..	48	33	81	9	..	9	68	65	133
9 months and under 12 months	..	..	..	30	23	53	3	2	5	66	30	96
1 year and under 2 years	..	..	..	53	39	92	7	3	10	147	79	226
2 years and under 3 years	..	..	..	20	24	44	..	3	3	87	55	142
3 years and under 5 years	..	..	..	20	16	36	4	5	9	91	62	153
5 years and under 7 years	..	..	..	12	10	22	3	5	8	78	80	158
7 years and under 10 years	..	..	..	9	2	11	..	2	2	96	36	132
10 years and under 12 years	..	..	..	5	5	10	..	..	..	52	18	70
12 years and under 15 years	..	..	..	8	2	10	3	1	4	60	26	86
15 years and under 20 years	..	..	..	4	8	12	2	..	2	85	43	128
20 years and over	..	..	..	10	11	21	3	..	3	140	63	203
Totals	..	..	..	568	444	1,012	77	50	127	1,203	725	1,928

TABLE LXXXIV—*continued*

TOOWOOMBA SPECIAL HOSPITAL

AGE GROUPS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1967

Age Groups	Admissions			Discharges			Deaths			Remaining		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Under 5 years	..	1	1	..	..	..	..	1	1	1	3	4
5 years and under 10 years	2	1	3	..	2	2	..	..	..	7	2	9
10 years and under 15 years	2	1	3	1	..	1	..	..	..	6	14	20
15 years and under 20 years	3	3	6	5	2	7	..	..	..	24	22	46
20 years and under 25 years	10	15	25	14	16	30	..	..	..	7	13	20
25 years and under 30 years	15	5	20	11	4	15	..	..	..	24	11	35
30 years and under 35 years	18	19	37	23	16	39	1	3	4	36	28	64
35 years and under 40 years	26	26	52	13	21	34	..	2	2	48	53	101
40 years and under 45 years	16	29	45	10	29	39	1	1	2	43	47	90
45 years and under 50 years	25	21	46	19	30	49	1	1	2	72	54	126
50 years and under 55 years	16	18	34	12	29	41	4	1	5	77	25	102
55 years and under 60 years	10	13	23	6	23	29	7	2	9	132	130	262
60 years and under 65 years	12	17	29	19	18	37	5	4	9	30	9	39
65 years and under 70 years	2	4	6	3	11	14	2	2	4	25	13	38
70 years and under 75 years	3	8	11	5	9	14	3	..	3	16	10	26
75 years and under 80 years	3	8	11	5	4	9	5	1	6	9	9	18
80 years and under 85 years	7	4	11	3	2	5	2	..	2	8	7	15
85 years and under 90 years	5	3	8	1	..	1	3	1	4	4	3	7
90 years and under 95 years	..	1	1	..	..	..	..	1	1	..	1	1
95 years and under 100 years	..	..	..	..	..	..	..	..	..	..	..	..
Unknown	..	1	1	..	1	1	..	..	..	3	3	6
Totals	175	198	373	150	217	367	34	20	54	572	457	1,029

MARITAL STATUS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1967

Single	73	30	103	66	40	106	20	10	30	468	279	747
Married	84	141	225	73	144	217	8	6	14	66	156	222
Separated	..	..	..	..	..	..	..	..	..	..	..	..
Widowed	11	21	32	9	21	30	2	4	6	9	12	21
Divorced	5	6	11	2	10	12	..	..	..	11	7	18
Unknown	2	..	2	..	2	2	4	..	4	18	3	21
Totals	175	198	373	150	217	367	34	20	54	572	457	1,029

LENGTH OF RESIDENCE IN THE HOSPITAL OF THE PATIENTS WHO WERE DISCHARGED OR WHO DIED DURING THE YEAR, AND OF THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1967

Under 1 month	..	..	..	31	14	45	6	3	9	14	15	29
1 month and under 3 months	..	..	..	34	70	104	2	1	3	17	13	30
3 months and under 6 months	..	..	..	33	52	85	..	2	2	19	19	38
6 months and under 9 months	..	..	..	11	23	34	1	1	2	20	6	26
9 months and under 12 months	..	..	..	9	14	23	1	..	1	13	8	21
1 year and under 2 years	..	..	..	9	16	25	1	1	2	69	50	119
2 years and under 3 years	..	..	..	8	8	16	3	3	6	18	20	38
3 years and under 5 years	..	..	..	5	2	7	3	4	7	34	29	63
5 years and under 7 years	..	..	..	..	2	2	1	..	1	26	21	47
7 years and under 10 years	..	..	..	2	2	4	1	..	1	32	40	72
10 years and under 12 years	..	..	..	1	..	1	1	1	2	34	20	54
12 years and under 15 years	..	..	..	1	1	2	..	..	..	39	23	62
15 years and under 20 years	..	..	..	3	2	5	2	..	2	62	51	113
20 years and over	..	..	..	3	11	14	12	4	16	175	142	317
Totals	..	..	..	150	217	367	34	20	54	572	457	1,029

TABLE LXXXIV—*continued*

IPSWICH SPECIAL HOSPITAL

AGE GROUPS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1967

Age Groups	Admissions			Discharges			Deaths			Remaining		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Under 5 years	8	12	20	..	..	..	..	..	..	17	23	40
5 years and under 10 years	3	5	8	2	4	6	3	3	6	23	25	48
10 years and under 15 years	..	4	4	..	2	2	4	2	6	33	18	51
15 years and under 20 years	4	3	7	1	3	4	2	..	2	24	25	49
20 years and under 25 years	7	..	7	3	..	3	1	..	1	30	16	46
25 years and under 30 years	3	1	4	..	..	..	1	..	1	30	17	47
30 years and under 35 years	2	..	2	1	..	1	..	..	..	20	18	38
35 years and under 40 years	5	..	5	2	..	2	..	..	..	22	16	38
40 years and under 45 years	3	..	3	2	..	2	..	1	1	20	22	42
45 years and under 50 years	3	..	3	..	..	..	..	..	..	17	24	41
50 years and under 55 years	..	..	..	..	1	1	1	..	1	14	28	42
55 years and under 60 years	..	..	..	..	1	1	..	..	..	21	19	40
60 years and under 65 years	1	..	1	5	10	15	1	..	1	16	10	26
65 years and under 70 years	..	..	..	6	4	10	1	..	1	7	15	22
70 years and under 75 years	1	..	1	8	2	10	2	2	4	4	7	11
75 years and under 80 years	..	..	..	2	1	3	..	1	1	5	2	7
80 years and under 85 years	..	..	..	1	3	4	1	..	1	2	2	4
85 years and under 90 years	..	..	..	..	..	..	..	1	1	..	..	..
90 years and under 95 years	..	..	..	..	..	..	..	..	..	..	..	..
95 years and under 100 years	..	..	..	..	..	..	..	..	..	..	..	..
Unknown	..	..	..	..	..	..	..	..	..	..	..	..
Totals	40	25	65	33	31	64	17	10	27	305	287	592

MARITAL STATUS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1967

Single	34	25	59	25	18	43	16	6	22	271	237	508
Married	6	..	6	5	7	12	1	..	1	21	32	53
Separated	..	..	..	..	..	..	..	..	..	2	3	5
Widowed	..	..	..	1	6	7	..	3	3	4	8	12
Divorced	..	..	..	2	..	2	..	1	1	4	7	11
Unknown	..	..	..	..	..	..	..	..	..	3	..	3
Totals	40	25	65	33	31	64	17	10	27	305	287	592

LENGTH OF RESIDENCE IN THE HOSPITAL OF THE PATIENTS WHO WERE DISCHARGED OR WHO DIED DURING THE YEAR, AND OF THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1967

Under 1 month	..	..	..	..	..	..	1	..	1	3	3	6
1 month and under 3 months	..	..	..	5	..	5	..	1	1	7	2	9
3 months and under 6 months	..	..	..	2	..	2	..	2	2	6	8	14
6 months and under 9 months	..	..	..	..	..	..	..	..	..	4	..	4
9 months and under 12 months	..	..	..	1	..	1	..	..	..	10	6	16
1 year and under 2 years	..	..	..	..	2	2	1	..	1	26	9	35
2 years and under 3 years	..	..	..	..	2	2	1	..	1	15	18	33
3 years and under 5 years	..	..	..	2	3	5	1	1	2	45	17	62
5 years and under 7 years	..	..	..	1	3	4	1	2	3	22	20	42
7 years and under 10 years	..	..	..	..	4	4	2	..	2	36	29	65
10 years and under 12 years	..	..	..	..	1	1	3	..	3	14	18	32
12 years and under 15 years	..	..	..	..	..	..	2	..	2	19	33	52
15 years and under 20 years	..	..	..	1	4	5	1	1	2	30	39	69
20 years and over	..	..	..	21	12	33	4	3	7	68	85	153
Totals	..	..	..	33	31	64	17	10	27	305	287	592

TABLE LXXXIV—*continued*

MOSMAN HALL SPECIAL HOSPITAL

Age Groups of Patients Whose Admissions, Discharges and Deaths Occurred during the Year and Those Who Remained in Hospital on 30th June, 1967

Age Groups	Admissions	Discharges	Deaths	Remaining
Under 5 years	..	..	..	..
5 years and under 10 years	..	..	..	..
10 years and under 15 years	..	..	..	1
15 years and under 20 years	2	1	..	4
20 years and under 25 years	3	5	..	7
25 years and under 30 years	8	7	..	16
30 years and under 35 years	8	9	..	18
35 years and under 40 years	17	10	2	20
40 years and under 45 years	14	10	..	24
45 years and under 50 years	8	11	..	34
50 years and under 55 years	10	7	..	19
55 years and under 60 years	10	8	2	35
60 years and under 65 years	8	5	..	25
65 years and under 70 years	3	2	2	20
70 years and under 75 years	..	..	2	8
75 years and under 80 years	3	1	1	13
80 years and under 85 years	5	..	2	5
85 years and under 90 years	..	..	1	3
90 years and under 95 years	1	..	..	1
95 years and under 100 years	..	..	..	..
Unknown	3	..	..	..
Totals	103	76	12	253

Marital Status of Patients Whose Admissions, Discharges and Deaths Occurred during the Year and Those Who Remained in Hospital on 30th June, 1967

Single	61	49	6	195
Married	26	18	2	33
Separated	4	1	3	6
Widowed	4	3	..	5
Divorced	5	4	..	9
Unknown	3	1	1	5
Totals	103	76	12	253

Length of Residence in the Hospital of the Patients Who were Discharged or Who Died during the Year, and of Those Who Remained in Hospital on 30th June, 1967

Under 1 month	..	21	1	8
1 month and under 3 months	..	20	3	10
3 months and under 6 months	..	6	2	14
6 months and under 9 months	..	15	..	13
9 months and under 12 months	..	2	1	3
1 year and under 2 years	..	11	..	23
2 years and under 3 years	..	..	3	14
3 years and under 5 years	..	..	1	29
5 years and under 7 years	..	..	..	17
7 years and under 10 years	..	1	1	26
10 years and under 12 years	..	..	..	19
12 years and under 15 years	..	..	..	26
15 years and under 20 years	..	..	..	19
20 years and over	..	..	..	32
Totals	..	76	12	253

TABLE LXXXV

ADMISSIONS, DISCHARGES AND DEATHS AT WACOL REPATRIATION PAVILION DURING THE YEAR ENDED 30TH JUNE, 1967

Total number of patients on books as at 30th June, 1967	117
Transferred from Brisbane Special Hospital	63
Transferred from Toowoomba Special Hospital	2
Transferred from Ipswich Special Hospital	1
Transferred from Repatriation General Hospital	94
Transferred from Rosemount Repatriation Hospital	1
	278
Discharged	88
Deaths	3
Transferred to Brisbane Special Hospital	58
	149

Total number of patients on books as at 30th June, 1967	129
Total number of patients on leave as at 30th June, 1967	33
Total number of patients on abscondence as at 30th June, 1967	1
Total number of patients in residence as at 30th June, 1967	95
Average number of patients daily resident	102

TABLE LXXXVI

EXPENDITURE TABLE FOR THE FINANCIAL YEAR ENDED 30TH JUNE, 1967

—	Brisbane Special Hospital	Toowoomba Special Hospital	Ipswich Special Hospital	Mosman Hall Charters Towers	Total and Average Costs
Average Number Daily Resident	1,645	962	582	225	3,414
	$	$	$	$	$
Total Expenditure	3,163,364	1,542,132	1,170,947	429,589	6,306,032
Less—					
Sales	4,703	3,168	3,422	2,028	13,321
Collections	232,286	17,495	2,062	1,374	253,217
Payments by Commonwealth—					
(*a*) Pharmaceutical Benefits	81,071	28,458	6,017	7,576	123,122
(*b*) Capital Subsidy	12,303	2,996	3,148	924	19,371
	330,363	52,117	14,649	11,902	409,031
Net Expenditure	2,833,001	1,490,015	1,156,298	417,687	5,897,001
Gross Cost per patient per annum	1,923	1,603	2,012	1,910	1,847
Net Cost per patient per annum	1,722	1,549	1,987	1,856	1,727
Gross Cost per patient per week	36.98	30.83	38.69	36.73	35.52
Net Cost per patient per week	33.12	29.79	38.21	35.69	33.21

TABLE LXXXVII

STATEMENT SHOWING EXPENDITURE BY THE DEPARTMENT OF WORKS AT SPECIAL HOSPITALS, CHERMSIDE NEURO-PSYCHIATRIC HOSPITAL AND THE EPILEPTIC HOME DURING THE FINANCIAL YEAR 1966–67

Place	Expenditure 1966–67		
	Revenue Fund	Loan Fund	Total
	$	$	$
Special Hospitals—			
Brisbane (excluding Expenditure of Repatriation Hospital, Goodna)	65,558.83	298,279.25	363,838.08
Charters Towers	3,415.98	675.75	4,091.73
Ipswich	13,405.99	24,048.37	37,454.36
Toowoomba	5,370.91	38,913.25	44,284.16
Epileptic Home, Toowoomba	908.51	30,749.35	31,657.86
Chermside Neuro-Psychiatric Hospital	..	26,975.00	26,975.00
Totals	88,660.22	419,640.95	508,301.19

DETAILS OF EXPENDITURE ON MAJOR WORKS

		$
Special Hospitals—		
Brisbane	Re-roofing, repairs, &c., Female Ward 6	11,219.15
	Roof repairs various buildings, repairs and painting bakehouse	18,009.24
	Internal Painting Female Ward 5	7,525.82
	Erection of Training Centre—Subnormal Children	172,992.44
	Water Supply extensions	8,074.67
	Security provision to Male Wards 14 and 15	9,991.06
	Renovations to Male Ward 2	16,058.54
Ipswich	Re-roofing Female Ward 1	6,550.14
	Re-roofing Male Ward 2—replace gutters to staff messroom	7,713.22
Toowoomba	Re-arrangement artisans' accommodation in conjunction with erection new laundry	11,700.56
Epileptic Home, Toowoomba	Installation of central heating	26,463.50
Chermside Neuro-Psychiatric Hospital		26,975.00

TABLE LXXXVIII
MENTAL HEALTH REVIEW TRIBUNAL
Statistics for Year ended 30th June, 1967

Applications made to the Mental Health Review Tribunal during the year by--	
Patients	41
Nearest relatives of patients	..
Other	1
	42
Disposal of applications—	
1. Applications adjourned during previous year—	
Application refused	..
No further action by Tribunal	2
	2
2. Applications heard by Tribunal (including 5 applications made during previous year)	
Refused	30
Recommendation for discharge	1
Hearing adjourned	9
	40
3. Applications not heard—	
Applicant did not appear	2
Applications withdrawn	2
Awaiting hearing	3
	7

TABLE LXXXIX
Population Changes at Epileptic Home During the Year 1966-67
Patients at 30th June, 1966: Males 49; Females 54; Total 103
For the Year Ended 30th June, 1967

Aged	Admitted		Discharged		Special Hospital		Deaths		Remaining		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
Under 5 years	..	..	..	..	..	..	..	..	..	..	..
5–10	..	..	..	..	..	..	..	..	..	..	..
10–15	..	..	..	..	..	..	1	..	1	1	2
15–20	2	..	1	..	..	..	..	..	5	4	9
20–25	3	..	..	..	..	..	..	..	9	4	13
25–30	1	..	1	..	1	..	..	..	7	6	13
30–35	..	1	..	..	..	..	..	..	6	8	14
35–40	2	..	..	..	..	..	..	..	9	4	13
40–45	..	..	..	..	..	..	1	..	4	2	6
45–50	..	..	..	..	..	..	..	..	1	8	9
50–55	..	..	..	..	..	..	..	..	1	4	5
55–60	3	..	1	..	..	..	1	..	8	4	12
60–65	1	..	..	..	..	..	..	1	3	5	8
65–70	..	..	..	..	..	..	..	..	..	3	3
70–75	..	..	..	..	..	..	..	..	..	1	1
75–80	..	..	..	..	..	..	..	..	..	..	..
Totals	12	1	3	..	1	..	3	1	54	54	108

Patients' Residence—	
Under 5 years	25
5–10 years	22
10–15 years	17
15–20 years	16
Over 20 years	28
Average Daily number resident	98

Cause of Death—

Male aged 12 years —Chronic Nephritis
Mental Deficiency
Epilepsy

Male aged 57 years —Cerebral Thrombosis
Bronchitis

Male aged 41 years —Coronary Occlusion
Hypertension
C M D and Epilepsy

Female aged 60 years—Chronic Endocarditis
Epilepsy

TABLE XC
Expenditure Table, Epileptic Home, for the Twelve Months Ended 30th June, 1967
Average Number Daily Resident—98

	$
Gross Expenditure	111,082
Collections	45,210
Net Expenditure	65,872
Gross Cost per patient per annum	1,134
Net Cost per patient per annum	672
Gross Cost per patient per week	21.81
Net Cost per patient per week	12.92

DIVISION OF WELFARE AND GUIDANCE

Senior Medical Director: B. J. PHILLIPS, M.B., B.S. (Qld.), D.P.M. (Lond.)
Medical Director: B. NURCOMBE, M.B., B.S. (Qld.), D.P.M. (Melb.)
Medical Director: A. SHEARER, M.B., B.S., (Qld.), M.R.C.P. (London), D.P.M. (Qld.)
Medical Director: B. KLUG, M.B., B.S. (Qld.), D.P.M. (Melb.)
Medical Officer: J. FOLEY, M.B., B.S. (Qld.)
Medical Officer: G. CRUICKSHANK, M.B., B.S. (Qld.)

The Division of Welfare and Guidance has increased its activities with the opening of the Institute of Child Guidance, Spring Hill. The Institute which is a section of the Royal Brisbane Hospital and works in close association with the Children's Hospital has been functioning for a full year. Its clinical administration is undertaken by the Division of Welfare and Guidance.

The Institute of Child Guidance has been most successful, particularly as far as the Day Hospital is concerned. Plans for the creation of facilities for an inpatient section of the Institute have been drawn and a decision concerning the starting of the building is to be made in the near future.

The demands on the Welfare and Guidance Clinics have been so great that in Brisbane there is a waiting list extending from 4–6 months. It is recognised by all that this is excessive and the employment of additional medical staff is being considered. The Day Hospital at the Institute of Child Guidance has had so many demands that it has not been able to take all the children for treatment who have been referred. As a consequence of this it has been recommended that a Day Hospital be established at the Mary Street Centre and thus a better service in Day Hospital facilities will be available in Brisbane.

The Division has had a busy year due in part to the absence of the Senior Medical Director on a study tour overseas on a National Health and Medical Research Council travelling scholarship for a period of six months. The difficulty in obtaining medical officers and the shortage of accommodation for both inpatients and outpatients has made the work of the staff hard. However, the accommodation provided at the Institute of Child Guidance is excellent.

STAFF CHANGES

In the first half of the financial year Dr. B. Klug resigned from the position of Medical Director and went into private practice. He returned to do some sessions with the Division as a part-time consultant. Dr. Shearer was appointed to the position of Medical Director vacated by Dr. Klug and Dr. Cruickshank joined the staff at the beginning of 1967.

SUMMARY OF ACTIVITIES

As has been pointed out many times before child psychiatry does not merely provide the treatment of a particular child, but the whole family is involved and various family members are interviewed and counselled.

This is the procedure in the various centres under the control of the Division. These centres comprise the Mary Street Centre which includes the central office and the E.E.G. Department, the Institute of Child Guidance, the Wilson Youth Hospital Centre, the Warilda Home Centre, the Toowoomba Child Guidance Centre, and the Townsville Child Guidance Centre.

The total number of examinations, interviews, tests, treatment sessions etc. which were carried out by the staff of the Division amounted to 29,383 over the financial year of 1966-67.

MARY STREET GUIDANCE CENTRE

A policy of zoning the Child Guidance Centres has been adopted and the Mary Street Centre receives patients from the southside of the City of Brisbane while those from the northside go to the Institute of Child Guidance, Rogers Street, Spring Hill. The centres in country towns are automatically zoned. Because of this rearrangement there will be differences of figures at the Mary Street Centre from the last financial year. Another factor which has affected figures is the shortage of staff. The number of examinations, interviews, treatment sessions, &c. which were carried out by the various professional persons in the clinics are shown in Table XCII. The clinical diagnoses of the children at the Mary Street Centre are seen in Table XCVII.

E.E.G. SECTION

The number of E.E.G. investigations for the financial year was 807. Most were referred by doctors of the clinics and these patients gave a number of abnormal tracings. The machine has been of considerable assistance in tracking down the cause of disturbed behaviour in children and it is an essential part of the Child Guidance Centre. Details of the E.E.G. Section activities are shown in Table XCIV.

INSTITUTE OF CHILD GUIDANCE

Patients are referred to the Institute as shown in the Tables. A large section of the referrals are from the Brisbane Children's Hospital. Staff of the Institute act as consultants to this institution and the psychologists carry out psychological testing of patients there.

The Day Hospital has been a great success and is working to capacity and there is a waiting list for admission for treatment.

When the building programme to provide for inpatients is completed it will be a prototype for further centres throughout the State. The activities of the Institute may be seen in the tables.

WILSON YOUTH HOSPITAL CENTRE

Wilson Youth Hospital is a hospital for the treatment of emotionally disturbed children who have been before the Children's Court which is situated at the hospital and patients are referred by the Magistrate to the Clinic staff for assessment and treatment. The medical staff also cares for the children who are retained in the hospital for treatment.

The Department of Children's Services is administratively responsible for the maintenance, care, and custody of children in the Wilson Youth Hospital while the Division of Welfare and Guidance is responsible for the clinical treatment. This dual control has been working very happily and efficiently.

Staff from the Centre visits the various Church Homes and private organisations caring for delinquent children. There is an outpatient department which sees any delinquent behaviour problem referred to the hospital for treatment.

When children are discharged from Wilson Youth Hospital they are under the supervision of the Welfare Officers of the Children's Services Department who work in close collaboration with the Child Guidance specialists of the hospital. The figures relating to the number of cases and the various reasons for the children being referred to the hospital can be seen in Tables XCIII and XCVI.

"WARILDA" HOME CENTRE

Clinical rooms and other facilities for the staff of the Welfare and Guidance Clinics have been included in the extensions which were recently made to the Warilda Home Centre. A Child Guidance Centre has been established for the treatment of the neglected children coming under the control of the Children's Services Department.

The children in Church Homes and other institutions who have been neglected or perhaps abandoned by their parents are often very emotionally disturbed and the staff of the "Warilda" Centre visit these homes in consultation in these cases.

TOOWOOMBA CHILD GUIDANCE CENTRE

A speech therapist has been appointed to the Clinic at Toowoomba. She treats patients at the Subnormal Welfare Association Centre and the Spastic Centre. A psychiatrist from Brisbane visits this Centre for two days per week but it is hoped the Clinic will have a full time medical officer and other staff next financial year. The psychiatrist also visits Westbrook Training Centre.

TOWNSVILLE CHILD GUIDANCE CENTRE

A Welfare and Guidance Clinic has been built in the grounds of the Townsville Hospital and it is hoped it will begin to function with the arrival of a psychiatrist from England.

This centre should give services to the Townsville zone and will save many people from this area visiting Brisbane. It has been planned in the past that the Townsville centre will have day hospital and inpatient facilities added at a later date.

MENTAL HEALTH ACTIVITIES

The Division of Welfare and Guidance conducts treatment centres but part of its responsibility is in the area of prevention. Public health is a very important function.

School Health Surveys

The system whereby the School Health Services examine school children for physical and mental abnormalities and refer the emotionally disturbed to the Welfare and Guidance Clinics continues. A doctor from the Welfare and Guidance Clinic visits the School Health Services headquarters and screens cases referred by the School Health sister. The patients are either referred to the family doctor, a hospital, a social worker, or to the Welfare and Guidance Clinic depending on the nature of the case.

Service to Kindergartens

A member of the medical staff visits the kindergartens one morning per week and conducts discussion groups with the mothers and gives consultative services to the kindergarten generally. No treatment is conducted at the kindergarten but if a mother wishes to consult the doctor, the child may be invited into the Child Guidance Clinic for treatment.

Visits to Institutions

The doctors of the Welfare and Guidance Clinics visit various Church Homes and other institutions caring for children. In seeing and treating of children and consulting with the persons in charge of these institutions, it is felt that a preventive procedure is taking place. Lectures to groups of parents and television talks have been given from time to time and this helps in the education of parents in children's abnormalities.

Teaching Activities

The officers of the Division of Welfare and Guidance do a considerable amount of in-training teaching for Child Guidance specialists, psychologists, and others. Undergraduates from the University receive some instruction from the officers of the Division of Welfare and Guidance. The faculties involved would be Medicine and Education and the Departments of Social Studies, Psychology, Speech Therapy, and Occupational Therapy.

The In-service Training Course for welfare officers, and special courses for clergy and people concerned with child care are being continued.

TABLE XCI

SHOWING SCHOOL ATTENDED, OR EMPLOYMENT FOLLOWED BY PATIENTS

School/Employment	Mary Street Centre	Institute of Child Guidance	Wilson Youth Hospital Clinic	Toowoomba Clinic	Westbrook Training Centre
Too young for School or work	275	212	2	30	..
Kindergartens and Child Minding Centres	33	72	1	8	..
Primary Schools (State and Private)	403	763	101	97	3
Secondary Schools (State and Private)	44	43	124	15	14
Subnormal and Opportunity Schools	28	26	16	30	1
Special Schools (Blind, Oral Deaf, Spastic Centres, Multiple Handicapped Association Schools)	6	10	1	..	..
Other Schools (Correspondence, Coaching Colleges, Business Colleges, &c.)	3	1	..	3	..
Clerical and Commercial Employment	..	1	..	1	3
Tradesmen and Skilled Workers	..	..	..	..	1
Semi-skilled and Unskilled Workers (Urban), (Labourers, process workers, apprentices, &c.)	5	1	31	..	16
Semi-skilled and Unskilled Workers (Rural), (Farm employees, stockmen, &c.)	1	..	8	2	4
Miscellaneous Workers (Domestic duties, &c.)	1	1	4	1	..
Unemployed	..	..	43	2	44
School or Employment unknown	25	10	..	1	3
Total	824	1,140	331	190	89

TABLE XCII

SHOWING NUMBER OF EXAMINATIONS, INTERVIEWS, TREATMENTS, &C., BY THE VARIOUS PROFESSIONS

Centre	Psychiatrist	Psychologist	Social Worker	Speech Therapist	Occupational Therapist	Remedial Therapist	Kindergarten Therapist	Medical Consultant	Totals
Mary Street Centre	3,661	1,104	573	1,458	..	..	..	554	7,350
Institute of Child Guidance	4,390	1,311	1,529	3,232	..	..	..	1,239	11,701
Institute of Child Guidance (Day Hospital)	62	663	..	31	432	473	248	..	1,909
Wilson Youth Hospital Centre	2,686	353	523	17	1,706	..	..	..	5,285
Warilda Centre	714	..	127	..	..	..	..	..	841
Toowoomba Clinic	1,025	100	..	972	..	..	..	..	2,097
Westbrook Training Centre	200	..	..	..	..	..	..	..	200
Totals	12,738	3,531	2,752	5,710	2,138	473	248	1,793	29,383

TABLE XCIII

SHOWING AGES OF NEW PATIENTS ATTENDING THE VARIOUS CENTRES OF THE DIVISION

Age Group	Mary Street Clinic	Institute of Child Guidance	Wilson Youth Hospital Clinic	Toowoomba Clinic	Westbrook Training Centre
Up to 18 months	82	2	..	1	..
18 months and under 3 years	36	28	..	3	..
3 years and under 5 years	97	173	..	25	..
5 years and under 8 years	230	348	4	55	..
8 years and under 12 years	234	420	50	49	..
12 years and under 15 years	104	132	184	46	16
15 years and under 18 years	41	34	93	11	73
Age not known	..	3	..	..	..
Total	824	1,140	331	190	89

TABLE XCIV

(Part i)

SHOWING NUMBER OF E.E.G. INVESTIGATIONS DONE DURING THE YEAR

Total Number of E.E.G.'s ..	807	
Welfare and Guidance Clinic, Mary Street (Selected Patients)	190	(24·0%) of the Total Number
Institute of Child Guidance (Selected Patients)	373	(46·2%) of the Total Number
Wilson Clinic Outpatients (Selected Patients)	68	(8·4%) of the Total Number
Wilson Youth Hospital (Selected Patients)	94	(12·0%) of the Total Number
Toowoomba Clinic (Selected Patients)	33	(4·2%) of the Total Number
Westbrook Farm Home for Boys (Selected Patients)	2	(0·2%) of the Total Number
Adult Psychiatric Clinic (Selected Patients)	47	(5·0%) of the Total Number
Total	807	100%

TABLE XCIV

(Part ii)

MARY STREET CLINIC

Total	= 190		
Normal	= 102	=	53·9%
Abnormal	= 88	=	46·1%

WILSON CLINIC

Total	= 68	=	
Normal	= 39	=	57·3%
Abnormal	= 29	=	42·7%

WILSON YOUTH HOSPITAL

Total	= 94		
Normal	= 46	=	48·9%
Abnormal	= 48	=	51·1%

INSTITUTE OF CHILD GUIDANCE

Total	= 373		
Normal	= 186	=	49·8%
Abnormal	= 187	=	50·2%

TOOWOOMBA CLINIC

Total	= 33		
Normal	= 16	=	48·4%
Abnormal	= 17	=	51·6%

ADULT PSYCHIATRIC CLINIC

Total	= 47	=	
Normal	= 27	=	57·4%
Abnormal	= 20	=	42·6%

WESTBROOK FARM HOME FOR BOYS

Total	= 2		
Normal	= 1	=	50·0%
Abnormal	= 1	=	50·0%

Total Number of E.E.G.'s	= 807		
Total Number of Normal	= 417	=	51·6%
Total Number of Abnormal	= 390	=	48·4%

TABLE XCIV

(Part iii)

CATEGORIES OF E.E.G. ABNORMALITIES

Abnormalities have been divided into—

(a) Active Epilepsy
(b) Epileptic Tendencies
(c) Focal Abnormalities
(d) Excess slow activity
(e) Diffuse Abnormalities
(f) Brain-stem Abnormalities
(g) Other non-specific abnormalities

SHOWING BRAIN ABNORMALITIES DETECTED BY E.E.G. INVESTIGATIONS

Clinic or Hospital	Active Epilepsy	Epileptic Tendencies	Focal Abnormalities	Excess Slow Activities	Diffuse Abnormalities	Brain-Stem Abnormalities	Non-specific Abnormalities
Welfare and Guidance (Mary Street)	No. 11 (12·6%)	No. 11 (12·6%)	No. 13 (14·7%)	No. 14 (15·9%)	No. 3 (3·4%)	No. 26 (29·5%)	No. 10 (11·3%)
Institute of Child Guidance ..	17 (9·9%)	23 (12·2%)	24 (12·8%)	45 (24%)	10 (4·3%)	46 (24·6%)	22 (12·2%)
Wilson Youth Hospital	3 (6·4%)	6 (12·6%)	5 (10·4%)	12 (25%)	Nil	15 (31·4%)	7 (14·2%)
Wilson Clinic	2 (6·8%)	7 (24·2%)	3 (10·4%)	6 (20·6%)	Nil	6 (20·6%)	5 (17·4%)
Westbrook Farm Home	Nil	Nil	1 (50%)	Nil	Nil	Nil	Nil
Toowoomba Clinic	1 (5·8%)	3 (17·7%)	4 (23·6%)	1 (5·8%)	Nil	3 (17·7%)	5 (29·4%)
Psychiatric Clinic	3 (15%)	1 (5%)	5 (25%)	6 (30%)	2 (10%)	Nil	2 (10%)
							Tumour 1 (5%)

TABLE XCV

SHOWING SOURCES OF REFERRAL OF NEW PATIENTS

Sources	Mary Street Centre	Institute of Child Guidance	Wilson Youth Hospital	Toowoomba Centre	Westbrook Training Centre
Parent or Guardian	253	474	26	64	..
Private Medical Practitioners	85	232	10	94	..
Public Hospitals	50	163	6	20	..
School Health Service	114	70	3	..	..
Maternal and Child Welfare Service	13	38	..	1	..
Other Health Department Agencies (Psychiatric Clinic, Social Work Division, &c.)	22	70	23	2	..
Commonwealth Government Departments (C.A.L., Vocational Guidance, &c.)	1	8	..	..	..
Children's Court Magistrate	..	..	103	5	2
Department of Children's Services	146	3	94	..	87
Residential Institutions Caring for Children ..	65	3	24	3	..
Education Department	16	49	8	..	..
Non-State Education Agencies	6	11	..	..	..
Welfare Organisations Caring for Children	45	8	1	..	..
Other Agencies (Juvenile Aid Bureau, " Life Line ", Marriage Guidance Council, &c.)	8	11	33	1	..
Total	824	1,140	331	190	89

TABLE XCVI

SHOWING REASONS FOR REFERRAL OF PATIENTS TO THE VARIOUS CENTRES

Reasons	Mary Street Clinic	Institute of Child Guidance	Wilson Youth Hospital Clinic	Toowoomba Clinic	Westbrook Training Centre
Aggressive Behaviour Against Persons (Assault, Cruelty, Attempted Homicide, &c.)	60	22	8	3	5
Aggressive Behaviour Against Property (Destruction, Vandalism, Fire-setting, &c.)	15	4	4	..	5
Antisocial Behaviour at Home or School (Uncooperative, deceitful, lying, disobedient, running away, &c.)	84	72	46	10	7
Stealing	41	21	79	6	47
Sexual Symptoms	11	3	27	3	9
School Problems (Lack of progress, not mixing or unpopular, resistance to study, school refusal, truancy)	174	244	22	33	..
Speech and Language Disorders	102	204	..	78	..
Psychosomatic and Sensory Disorders	69	59	7	13	..
Organic Brain Disorders and Mental Deficiency	24	38	3	2	..
Neurotic or Emotional Symptoms (Hyperactivity, tantrums, fears or phobias, jealousy, sibling rivalry, &c.)	176	154	27	30	..
For Psycho-diagnostic Testing, E.E.G., &c., only	63	102	8	..	..
For Psychiatric Assessment only (concerning education matters, employment, certification, discharge from institutions, &c.)	43	99	..	8	..
Mixed Symptoms	249	114	122	7	105

TABLE XCVII

SHOWING DIAGNOSES OF CASES ATTENDING THE VARIOUS CENTRES

Diagnostic Categories	Mary Street Centre	Institute of Child Guidance	Wilson Youth Hospital Clinic	Toowoomba Clinic	Westbrook Training Centre
Neurasthenic States	1	1	..	..	..
States of Clouded Consciousness	..	..	1	..	..
States of Intellectual Subnormality—I.Q. below 70	45	71	18	29	4
I.Q. 71–90	103	141	84	26	29
Organic Brain Syndromes	14	89	1	3	..
Mixed Organic Brain Syndromes and Intellectual Subnormality	4	28	1	..	..
Epileptic States	17	61	8	4	..
Disorders of Speech—					
Mutism and Deaf Mutism	2	4	..	..	..
Delayed onset,/retarded development of speech	85	216	2	65	1
Disorders of phonation and co-ordination of speech	48	56	1	18	..
Disorders of communication and comprehension of speech	29	58	2	8	..
Disorders of Calculation	1	9	..	..	..
Mixed Speech and Communication Disorders	8	27	..	..	..
Disorders due to Retarded or Arrested Development of the Brain	27	34	..	10	..
Disorders due to Degenerative or Heredito-Familial Diseases	..	4	..	..	..
Disorders due to Physical Agents—					
I Trauma	..	6	5	1	..
II Other than trauma (X-ray irradiation, Electric shock, Encephalopathy, &c.)	1	4	1	..	..
Disorders due to Chemical Agents (poisoning, anoxia, drugs, &c.)	2	14	..	1	..
Disorders due to Infective Agents (Meningitis, Encephalitis, &c.)	3	7	1	1	..
Disorders due to mixed Physical, Chemical, and Infective Agents	..	5	..	..	..
Disorders due to Metabolic and Endocrine Dysfunctions	..	..	1	1	..
Disorders due to Haemoporetic Factors (Anaemia, RH Incompatability, &c.)	2	3	1	..	..
Disorders due to Cerebral Tumour	..	1	..	..	..
Disorders due to Disturbance of Brain Physiology (Headaches, Migraine, &c.)	5	4	..	1	..
Disorders due to Isolation and/or Sensory Deprivation	6	40	4	1	..
Mixed Brain Disorders	..	1	..	..	..
Psychosomatic Disorders—					
Skin Reactions	2	4	..	..	..
Musculo-skeletal Reactions	..	5	1	..	..
Respiratory Reactions	3	15	2	..	..
Cardio-vascular Reactions	..	3	..	..	..
Haemic and Lymphatic Reactions	..	1	..	4	..
Gastro-intestinal Reactions	17	29	1	..	..
Genito-urinary Reactions	41	59	11	11	..
Endocrine Reactions	4	..	1	..	..
Nervous System Reactions	7	1	..	..	..
Psychogenic Reactions of Organs of Special Sense	..	3	..	..	..
Mixed Psychosomatic Reactions	1	1	..	..	..
Psychological Reactions to Physical Disorders—					
Reaction to Deformity (loss of limb, spasticity, &c.)	4	3	1	..	..
Reaction to Chronic Infectious Diseases (e.g., Rheumatic fever)	..	3	1	..	..
Reaction to Sensory Loss	5	1	..	..	..
Reaction to Endocrinopathics (e.g., obesity)	2	6	1	..	..
Reaction to Chronic Diseases (e.g., diabetes, coeliac disease)	3	..	..	..	..
Reaction to Localized Infections	1	..	..	..	..
Reaction to Mixed Physical Disorders	1	..	..	1	..

TABLE XCVII—*continued*

SHOWING DIAGNOSES OF CASES ATTENDING THE VARIOUS CENTRES—*continued*

Diagnostic Categories	Mary Street Centre	Institute of Child Guidance	Wilson Youth Hospital Clinic	Toowoomba Clinic	Westbrook Training Centre
Transient Situational Behaviour Disorders—					
Gross Stress Reaction	7	2	..	..	..
Adult Type Situational Reaction (e.g., showing anxiety)	15	25	3	..	..
Situational Adjustment Reaction of Infancy	13	15	2	1	..
Situational Emotional Reactions (e.g., temper tantrums, sibling rivalry, &c.)	162	227	24	7	..
Situational Neurotic Trait Reactions (e.g., tics, spasms, phobias, &c.)	42	27	10	2	..
Situational Habit Disorders (e.g., habitual manipulations, thumbsucking, nailbiting, &c.)	9	15	4	5	..
Mixed Situational Behaviour Disorders	27	13	2	..	..
Conduct Disorders—					
Aggression Against Persons	38	47	16	3	3
Aggression Against Property	15	13	9	1	1
Antisocial Behaviour (e.g., deceitfulness, lying, disobedience, &c.)	78	106	38	10	..
Stealing	24	30	83	7	49
Disorders Related to Sexual Behaviour	5	3	21	3	6
Disorders Related to School (e.g., general lack of progress, truancy, school refusal, &c.)	113	208	31	22	..
Mixed Conduct Disorders	55	47	69	12	27
Personality Disorders—					
Inadequate, Immature	58	154	20	7	3
Schizoid, Introverted	5	32	26	3	8
Paranoid	..	2	1	1	1
Other Personality Pattern Disorders	6	2	3	5	..
Emotionally Unstable, Hysterical	15	31	12	4	2
Passive-Aggressive (including aggressive and dependent types)	38	55	10	7	1
Compulsive, Obsessional	14	7	..	1	..
Antisocial Sociopath, i.e., " Psychopath "	1	..	1	1	9
Dyssocial Personality	1	..	8	5	5
Sociopath With Sex Disorder	1	..	16	..	..
Mixed and Other Personality Disorders	2	1	2	..	1
Psychoneuroses—					
Anxiety State	14	6	4	10	1
Conversion Reaction	2	1	..	1	..
Phobic Reaction (including School Phobia)	5	18	3	4	..
Obsessive-Compulsive Reaction	2	..	2	..	..
Neurotic Depressive Reaction	10	3	5	..	..
Undifferentiated and Mixed Psychoneurotic Reactions	6	..	1	..	..
Psychoses—					
Affective Psychotic Disorders	..	1	1	..	..
Schizophrenic Disorders (Adult and Adolescent)	2	1	..	..	..
Early Infantile Autism	3	..	..	..	..
Diagnosed as " Normal "	112	69	*	1	..

* Number not known

ALCOHOLISM CLINICS

Medical Officer in Charge: R. B. MILTON, M.B., B.S. (Q'ld.)

The facilities provided specifically for treating alcholism in Queensland are the Alcoholism Clinic, Royal Brisbane Hospital, and the Wacol Rehabilitation Clinic. The first is a fourteen-bed short-term inpatient and daypatient unit for males and females; the latter a long-term stay unit for males only. Admission to the Alcoholism Clinic, Royal Brisbane Hospital is voluntary; that to the Wacol Rehabilitation Clinic is by committal under *"The Inebriates Institutions Act of* 1896."

The Alcoholism Clinic, Royal Brisbane Hospital, provides intensive inpatient care over a period of one to three weeks with physical, laboratory, social, and psychological investigation followed by discharge to daypatient attendance or to sources of help in the community, such as Alcoholics Anonymous. The Wacol Rehabilitation Clinic is provided for male alcoholics who are too seriously affected to benefit by only a short period of treatment. The usual period of committal to this unit is six months, although patients may be released on probation earlier if they make adequate progress.

Treatment at each centre involves use of group meetings, individual interviews, teaching sessions, films on alcoholism and emotional and social problems of living. The total patient attendances at group meetings and individual interviews for the year at the Alcoholism Clinic, Royal Brisbane Hospital was 22,370. There were 20,500 attendances at group meetings at the Wacol Rehabilitation Clinic.

STAFF

A social worker, Mr. G. Smiley, was appointed to the Alcoholism Clinic, Royal Brisbane Hospital in January, 1967.

A pastoral psychologist, Ronald Lee, Ph.D., was given a six-month appointment starting in January, 1967. This has been a profitable appointment in many ways, one of which has been to demonstrate the value of appointing an appropriately trained minister of religion to a secular position.

DEVELOPMENT

A significant advance at the Alcoholism Clinic has been the development of routine assessment procedures for each patient. The present system is to admit patients requesting treatment for one to three weeks. During this time the patient is evaluated by physical examination, laboratory investigation, psychological testing, and social assessment. He participates in an active programme of group therapy, and his degree of participation and general behaviour in the ward are recorded. These observations are discussed at a weekly staff meeting, and plans for future treatment are based on the conclusions reached.

The activities of the Alcoholism Clinic and the Wacol Rehabilitation Clinic have been co-ordinated during the year. For instance, patients who request admission to the Wacol Rehabilitation Clinic are first admitted to the Alcoholism Clinic, Royal Brisbane Hospital, for the routine assessment described above. During this time a group meeting is arranged for them attended by a number of responsible patients brought from Wacol. These patients explain the organisation of the Wacol community and discuss with the patient his reasons for wishing to be admitted there, and how he might best benefit from treatment during his stay.

Patients at Wacol are sometimes transferred to the Alcoholism Clinic for the last week of their period of committal in order to facilitate arrangements for them to obtain employment and suitable accommodation.

The result of increased co-ordination of activity between the two clinics has been the greatly increased use of the daypatient facilities at the Alcoholism Clinic by patients discharged from the Wacol Rehabilitation Clinic. During the year there were 534 daypatient visits made by patients discharged from Wacol, and 149 visits by their relatives. The number of such visits in previous years has been few.

A programme for training ministers of religion in some of the techniques used at the Alcoholism Clinics has been established. Four ministers have been attending the Alcoholism Clinic, Royal Brisbane Hospital weekly for over a year, and during this time have observed group therapy and conducted group meetings under supervision. Experience in behaviour disorders is an unusual and valuable asset for a minister, and the Alcoholism Clinics are providing a useful community service through training in this field.

The treatment programme at the Wacol Rehabilitation Clinic has been stabilised by the introduction of a system of weekly evaluation of the behaviour, work, and participation in therapy of patients. These observations are used in determining the desirability of having patients accept responsibility in their community and of making recommendations for their release on probation.

Two interesting research studies have been completed during the year. The first dealt with the degree of improvement of patients after two weeks' treatment in the Alcoholism Clinic, This showed significant improvement in the outlook of patients as measured by a test of their increased sense of purpose in life. A satisfactory follow-up study is beyond the present resources of the Alcoholism Clinics, but this study serves as a useful indication of the value of present treatment methods.

Another study was completed and this was concerned with the development and reliability testing of a formula expressing the severity of drinking in alcoholics. A very high reliability rating of 0·819 (significant at the 0·001 level) was recorded between the three interviewers taking part in the study. This formula is already being applied in clinical assessment of patients, and may be a suitable instrument for use in follow-up studies.

CO-ORDINATED ACTIVITY WITH EDUCATION DEPARTMENT

Public education activities undertaken in conjunction with the Department of Education's section of the Co-ordinating Committee on Alcoholism included seminars for clergy and doctors conducted by the Medical Officer in Charge at Bundaberg and Rockhampton. An afternoon discussion at the Alcoholism Clinic, Royal Brisbane Hospital, and a public meeting were held during the visit of Professor Howard Clinebell to Brisbane.

Lectures were given by Alcoholism Clinic staff to the Brisbane Clergy-Doctor Group, St. Vincent de Paul Society, Prisoners' Aid Society, University Women's Graduates Association, and Medical and Social Studies students.

ATTENDANCE FIGURES—ALCOHOLISM CLINIC, ROYAL BRISBANE HOSPITAL

The Alcoholism Clinics have been established for a comparatively short time and their development, reflected in changes in attendance figures, is of interest. These figures are therefore dealt with in some detail.

Table XCVIII sets out the referral sources of new patients. There has been a significant rise in the number of patients referred by medical practitioners, both within and without the Royal Brisbane Hospital. This indicates greater recognition of the Clinics by doctors, and probably greater acceptance of alcoholism as a medical condition.

Table XCIX shows the number of patients and their relatives presenting for treatment.

Table C sets out attendances by patients and relatives at interviews and group meetings.

Table CI compares a variety of figures from this year and the previous year, indicating percentage changes in the various statistics. This Table indicates a number of important trends, as follows:—

1. The number of new patients coming to the clinic is virtually unchanged. This reflects a static community attitude to alcoholism treatment, and indicates a need for increased public education in the field.
2. Despite this, many more patients have continued treatment, and this has resulted in an increase of 14 per cent. in the total number of patients treated during the year.

   Alcoholism clinics find that one of their problems is retaining patients' interest in and motivation to continue treatment. These figures indicate that the Clinic has improved its techniques in this area.
3. More relatives of patients are coming to the Clinic. A conscious attempt has been made by Clinic staff to involve relatives, and the increase of 22 per cent. in relatives treated reflects this.
4. Patients visit the Clinic more frequently than previously. Thus the number of patients increased by 14 per cent., but the number of visits made increased by 25 per cent. A similar situation applies to the attendances by relatives.

The overall impression made by these increased figures is gratifying, because in the absence of a formal follow-up study, the best indication of the effectiveness of treatment is the degree to which patients and relatives attend as daypatients. A high and improving standard of treatment has thus been maintained by constant review of techniques and the appointment of additional staff.

TABLE XCVIII

SHOWING REFERRAL SOURCES OF NEW PATIENTS

	Male	Female
Medical—		
(*a*) Doctors within R.B.H.	166	17
(*b*) Other doctors	80	15
Self referred	35	3
Spouse, relative, or friend	35	6
Alcoholics Anonymous	14	2
Social work agency	9	1
Court, police, probation officer	16	1
Employer	2	—
Life Line	5	1
Clergy	10	1
Co-ordinated Committee on Alcoholism	5	2
St. Vincent de Paul Society	13	—
Other sources	3	—
	393	49
Total		442

TABLE XCIX

SHOWING PATIENTS AND RELATIVES PRESENTING FOR TREATMENT

——	Patients			Relatives		
	M	F	Totals	M	F	Totals
New	393	49	442	159	267	426
Seen Previously	17	19	193	13	38	51
	Total		635	Total		477
Combined Total			1,112			

TABLE C

SHOWING ATTENDANCES OF PATIENTS AND RELATIVES AT GROUP MEETINGS AND INTERVIEWS

GROUP MEETINGS

——	Patients	Relatives
Male	13,185	617
Female	2,133	2,084
Totals	15,318	2,701

Group Meeting Attendances	18,019
Pavilion 4 Interviews	3,983
Lowson House Interviews	368
Total	22,370

TABLE CI

SHOWING COMPARISONS BETWEEN FIGURES FOR 1965–66 AND FIGURES FOR 1966–67

——	1965–66	1966–67	Per Cent. Change
New Patients	450	442	−2
Patients continuing treatment	108	193	79
Total Patients	558	635	14
New Relatives	337	426	26
Relatives continuing treatment	54	51	−6
Total Relatives	391	477	22
Total Patients and Relatives	949	1,112	17
Visits to Clinic by Patients	2,918	3,647	25
Visits to Clinic by Relatives	1,226	1,646	34
Total visits made	4,144	5,293	28

LABORATORY OF MICROBIOLOGY AND PATHOLOGY

Director: J. I. Tonge, M.B., B.S. (Syd.), D.C.P. (Syd.), M.C.P.A.

Deputy Director: M. J. J. O'Reilly, M.B., B.S. (Syd.), M.C.P.A.

Pathologists: A. Davison, M.B., B.S. (Qld.), M.C.P.A.
N. G. Johnston, M.B., B.S. (Qld.), M.C.P.A.

Medical Virologist: B. C. Allan, M.B., B.S. (Qld.), M.R.C.P.

Laboratory Supervisor: D. J. W. Smith, M.Sc. (Melb.).

GENERAL

The staff of the Laboratory and the Institute of Forensic Pathology consists of 5 medical officers, 1 graduate laboratory supervisor, 3 senior bacteriologists, 11 science graduates, 3 laboratory technicians Division II, 11 technical assistants, 15 cadets, 13 attendants, 7 clerical staff and 4 cleaners.

Dr. D. J. Brand, a Research Fellow supported by a grant from the National Heart Foundation, was working at the Institute of Forensic Pathology until December 31st, 1966.

Dr. B. Sherwood Mather of the Department of Surgery in the University of Queensland and supported by an N.H.M.R.C. grant is now working at the Institute on an investigation of the mechanical properties of the human body.

The Director represents the Department of Health on the Council of the Queensland Institute of Medical Research and is a member of the Traffic Injury Sub-committee of the National Health and Medical Research Council. He is also a member of the Examining Council of the Australasian Institute of Medical Laboratory Technology and the Bacteriological Committee of the National Tuberculosis Advisory Council. The Deputy Director is a member of the Red Cross Blood Transfusion Committee. Dr. Davison is a member of the State Maternal Mortality Committee. Mr. Cook served as Chairman of the Queensland Branch of the Australian Society for Microbiology.

The medical staff give a series of lectures on Forensic Medicine in the University of Queensland and regular post-mortem demonstrations for medical and dental students as well as for police recruits. Lectures have also been given on various specialized subjects in microbiology by staff members both at the University and the Queensland Institute of Technology. Close liaison is maintained with the University and the Institute and the staff provide specimens of interest.

Two members of the staff attended the Eleventh Congress of the International Society of Haematologists in Sydney in in August, 1966, and one, the Annual Meeting of the College of Pathologists of Australia. Miss Battey by invitation delivered a paper entitled "Penicillin resistant organisms in Gonorrhoea", at a Symposium on Antibiotics organized by the Postgraduate Committee in Medicine of the University of Sydney in September, 1966. Dr. Davison read a paper entitled "Aviation Pathology at a Remote Site", at the International Meeting on Aerospace Medicine held in Sydney in November, 1966. Two members of the medical staff attended a conference on Aviation Pathology in Melbourne in May, 1967, and the Director attended a Study Week on Road Safety Practices in Melbourne in May, 1967. The Director attended a special meeting of the Bacteriological Committee of the National Tuberculosis Advisory Council in Canberra in April, 1967. At this meeting the Commonwealth recommendations for the bacteriological investigation of mycobacteria and sensitivity tests were revised.

The Animal Breeding Station at the Normanby is functioning satisfactorily. During the year certain alterations were made to the air-conditioning so as to provide a supply of specially filtered air to two small isolation rooms for mouse breeding. Eighteen Specific-Pathogen-free mice were flown from U.S.A. and a mouse colony has been established for use by the virology staff. The bedding and food for the mice are autoclaved and it is hoped the colony will be kept free of any native virus infections. The establishment of this colony —an essential adjunct to any diagnostic virology laboratory— creates more work and it will be necessary to have another attendant permanently stationed at the Breeding Station. It is hoped that the grounds can be laid out more attractively in the near future. The building itself has proved to be most satisfactory and functional.

Unrestricted approval has been granted to the laboratory by the Laboratory Approvals Committee of the College of Pathologists of Australia. This year the staff participated in evaluation trials in biochemistry, serology, haematology and biochemistry, conducted by the College.

The staff has been engaged in a number of research projects both within the laboratory, at the Institute of Forensic Pathology and in collaboration with the Queensland Institute of Medical Research, the University of Queensland and other institutions. Many of these projects are still in progress and some are discussed later in this report.

The laboratory is the W.H.O. Leptospirosis Reference Centre for Australasia and is the Tuberculosis Reference Laboratory for Queensland.

During the year excellent and much appreciated co-operation has been received from the Royal Brisbane Hospital, Princess Alexandra Hospital, the Queensland Institute of Medical Research, the Institute of Medical and Veterinary Science, Adelaide, the Institute of Clinical Pathology and Research, Lidcombe, N.S.W., and various departments of the University of Queensland.

Q. FEVER

During the year 277 recent infections with Q. fever were diagnosed serologically. Of these 260 were from Queensland, 16 from New South Wales and one from Sabah, Malaysia. Diagnostic criteria used are: a complement fixation titre for *Coxiella burneti of* 1:64 or greater in a single specimen or a four-fold rise in titre in paired sera. The geographical distribution of the cases is set out in Table CII.

The cases occurred predominantly in persons associated with the meat industry. There was also an association with those in sheep and dairying occupations. The occupational distribution is essentially the same as that of previous years.

One patient with aortic incompetence and stenosis died in 1966. In 1963 he was known to have severe valvular disease and a titre for *C. burneti.* Phase I of greater than 1:1024 and Phase II 1:512. His Phase I titre had fallen to 1:16 and Phase II to 1:32 at the time of his death. Efforts to isolate *C. burneti* from the lymph nodes, aortic valve, spleen and blood at autopsy were unsuccessful. It is considered by the clinician that this patient was probably cured of his endocarditis by intravenous "Reverin" and subsequently died as a result of the valvular disease.

Three other patients also with endocarditis and a high titre to *C. burneti* Phase I antigen are currently under investigation. All three patients are associated with the meat or grazing industries.

Serum specimens from 1,640 natives in the inland Baining area and patients at the Nonga Base Hospital in New Britain were tested for antibodies to *C. burneti* but no reactors were found.

Thirteen cattle sera were submitted from Townsville by the Animal Research Institute for serological evidence of Q. fever in an attempt to find the source of infection of a member of a station owner's family. Two of the cattle had serum titres of 1:64 to *C. burneti.*

TABLE CII

GEOGRAPHICAL DISTRIBUTION OF Q. FEVER CASES DIAGNOSED IN THE LABORATORY

(1st July, 1966 to 30th June, 1967)

QUEENSLAND

District	Number
Metropolitan	69
Moreton	19
Maryborough	22
Downs	43
Cairns	7
Townsville	8
Mackay	4
Rockhampton	43
Roma	12
Central West	13
South-West	20
Total	260

NEW SOUTH WALES

Northern Rivers	3
Tenterfield	3
Tamworth	6
Newcastle	4
Total	16

MALAYSIA

Sabah	1
TOTAL	277

LEPTOSPIROSIS

(a) Incidence: geographic and occupational

During the year, 1st July, 1966 to 30th June, 1967, serological evidence of recent leptospiral infections was found in 150 patients. Of these 134 were from Queensland, 14 from New South Wales and one each from South Australia and Malaysia.

The geographical distribution of cases and the serogroup of the causative serotypes are set out in Table CIII. The occupational distribution of cases is summarized in Table CIV.

(b) The WHO/FAO Leptospirosis Reference Centre

Cultures from the collection of type strains maintained in the laboratory have been sent to institutions in New South Wales, Victoria, South Australia, Tasmania, New Guinea and New Zealand during the year. Cultures and antisera have been provided for research and teaching purposes in other institutions within the State.

Instruction in laboratory diagnostic procedures has been given to medical officers and laboratory technicians visiting the laboratory for short periods.

Three strains isolated from patients in Brisbane during the year were typed as *pomona, copenhageni* and *zanoni,* respectively. The latter was isolated from a schoolboy who had just returned from a holiday in north Queensland where his infection was undoubtedly acquired.

Two strains isolated from pigs and submitted from the Veterinary School, University of Queensland were typed as *pomona.* Two strains isolated from bovines and submitted from the Animal Research Institute, Department of Primary Industries, are under investigation. One strain which does not grow readily in conventional media has been tentatively classified within the *hebdomadis* serogroup.

The examination of native rodents from southern Queensland was continued during the year. A number of rats, *Rattus culmorum* trapped by officers of the Forestry Department at Elgin Vale State Forest were examined but no isolates were obtained.

The follow-up of patients for immunoglobulin studies at the School of Public Health, U.C.L.A. is continuing. The relationships of immunoglobulins A (γ A), G (γ G) and M (γ M) to agglutination titres are being studied.

During the year 1,640 specimens from natives in the Gazelle Peninsula, New Britain, collected by Dr. J. Kariks were screened for leptospiral antibodies. Antibody titres of 100 or more were found in 191 sera. The *icterohaemorrhagiae, javanica, hebdomadis, hyos* and *grippotyphosa* serogroup provided the majority of reactors.

Leptospires isolated in Australia

The basic infrasubspecific taxon in the genus *Leptospira* is the serotype. The recent elevation of subserotypes to serotype status and the adoption of a former subserotype *incompleta* strain as a neotype strain of the serotype *icterohaemorrhagiae,* have led to changes in the nomenclature affecting the classification of Australian *icterohaemorrhagiae* group strains.

The former subserotype *icterohaemorrhagiae* of the serotype *icterohaemorrhagiae,* to which all Queensland strains fully investigated belong, is now serotype *copenhageni.* The former subserotype *incompleta,* of the serotype *icterohaemorrhagiae,* now serotype *icterohaemorrhagiae,* is not known to be represented amongst Australian strains. There are no published records of the earlier subserotype status of isolates from southern States, previously recorded only as serotype *icterohaemorrhagiae.*

Eighteen serotypes, as presently defined have been identified amongst Australian isolates. The host range of the hyos group serotype *bakeri* has been extended to include the rat, *R. assimilis.* A revised list of host records is presented in Table CV.

TABLE CIII

GEOGRAPHICAL DISTRIBUTION AND SEROGROUP OF INFECTING LEPTOSPIRES IN 150 LEPTOSPIRAL INFECTIONS

(1st July 1966 to 30th June 1967).

Serogroup	Number
Coastal area of Queensland, North of Rockhampton—	
icterohaemorrhagiae	4
canicola	2
pyrogenes	10
australis	4
pomona	8
hebdomadis	7
hyos	1
javanica	1
Indeterminate (? mixed)	9
Total	46
Coastal area of Queensland, Rockhampton to New South Wales border—	
icterohaemorrhagiae	2
australis	3
pomona	52
grippotyphosa	2
hyos	11
Indeterminate (? mixed)	4
Total	74
Darling Downs and Western Queensland—	
australis	1
pomona	11
hyos	2
Total	14
New South Wales—	
icterohaemorrhagiae	1
pomona	11
hebdomadis	1
hyos	1
Total	14
South Australia—	
pomona	1
Sabah, Malaysia—	
pyrogenes	1
Total	150

TABLE CIV

OCCUPATIONAL DISTRIBUTION OF LEPTOSIPROSIS INFECTIONS

(1st July, 1966 to 30th June, 1967)

—	Number
Meat Industry	58
Dairying Industry	26
Sugar Industry	10
Other Occupations	27
Unspecified	29
Total	150

TABLE CV

LEPTOSPIRES ISOLATED IN AUSTRALIA

Serogroup	Serotype	Man	Animal Hosts	
			Domestic	Wild
icterohaemorrhagiae	*copenhageni* (formerly serotype *icterohaemorrhagiae*, subserotype *icterohaemorrhagiae*)	+		*Rattus norvegicus*
	mankarso *	+	Dog	
javanica	*celledoni*	+		*Isoodon macrourus* *Rattus assimilis* *Melomys cervinipes*
canicola	*canicola*	+		
	broomi	+		*Isoodon macrourus* *Rattus rattus*
	bindjei	+		*Melomys littoralis* *Melomys cervinipes*
pyrogenes	*zanoni*	+		*Isoodon macrourus* *Rattus rattus* *Rattus norvegicus* *Rattus conatus* *Rattus assimilis* *Melomys littoralis* *Melomys cervinipes* *Uromys caudimaculatus* *Mus musculus*
	robinsoni	+		*Uromys caudimaculatus* *Rattus conatus*
pomona	*pomona*	+	Pigs Cattle Sheep	
australis	*australis*	+		*Perameles nasuta* *Isoodon macrourus* *Rattus conatus* *Rattus assimilis* *Rattus rattus* *Mus musculus* *Uromys caudimaculatus*
	bratislava	+		
grippotyphosa	*grippotyphosa*	+		*Isoodon macrourus* *Rattus conatus*
hebdomadis	*kremastos*	+		*Perameles nasuta* *Isoodon macrourus*
	szwajizak (formerly serotype *mini*, subserotype *szwajizak*)	+		*Isoodon macrourus*
	medanensis	+		*Perameles nasuta* *Isoodon macrourus*
	perameles			*Perameles nasuta*
hyos	*hyos*	+	Pigs	
	bakeri			*Rattus assimilis* *Uromys caudimaculatus* *Hydromys chrysogaster*

* Serotype unknown

TYPHUS

Three cases of scrub typhus and four cases of murine typhus were diagnosed in the laboratory by the Weil-Felix test. A four-fold increase in titre in paired specimens or a titre of 1:128 in a single specimen was considered diagnostic. The three scrub typhus patients were from the Cairns area.

The four cases of murine typhus were from Cairns, Mt. Isa, Rockhampton and Sabah, Malaysia. In only one case, that from Cairns, was the diagnosis confirmed by finding complement fixing antibodies to *Rickettsia mooseri*.

BRUCELLOSIS

During the year 22 cases of brucellosis were diagnosed serologically. A four-fold increase in titre in paired specimens or a titre of 1:128 or greater in a single specimen was regarded as diagnostic. One patient contracted Q. fever whilst currently infected with brucellosis.

The occupational and geographic distribution of these cases is set out in Table CVI.

SURVEY OF SERA FROM NEW BRITAIN FOR MYCOPLASMA, COLD AGGLUTININS AND SYPHILIS SEROLOGY

Sera from 1,640 natives in the Gazelle peninsula in New Britain were collected by Dr. J. Kariks and these were examined for antibodies to *Mycoplasma pneumoniae* and cold agglutinins. It was found that 8·8 per cent. of the sera had antibodies to *M. pneumoniae* antigen at a titre of 1:8 or more and 16 per cent. of the sera had cold agglutinin titres of 1:8 or greater.

These same sera were tested with the V.D.R.L., Kolmer Wasserman and Reiter Protein Antigens. Seventy-three percent of the sera were reactive with one or more of the tests. A report on this serological survey is being prepared.

TABLE CVI

BRUCELLOSIS INFECTIONS ON SEROLOGICAL EVIDENCE

(1st July, 1966, to 30th June, 1967).

Locality	Number
Queensland—	
Brisbane	8
Ipswich	1
Mackay	1
Rockhampton	3
Townsville	1
Toowoomba	1
Atherton	1
Maryborough	5
Cooroy	1
Total	22

OCCUPATIONAL DISTRIBUTION OF BRUCELLOSIS CASES

Occupation	Number
Queensland—	
Meat Industry	10
Dairying Industry	5
Other Occupations	2
Unknown	5
Total	22

BACTERIOLOGY

(a) Corynebacterium species

Only one toxigenic strain of *Corynebacterium diphtheriae* was isolated this year. It was grown from a post-mortem skin swab of a three-month-old infant who died unexpectedly. The baby had an eczematous rash and the cause of death was recorded as diphtheritic infection of an infantile eczematous rash. (P.M. 16156/66.)

An organism, isolated from an abscessed axillary gland of a butcher from Toowoomba, was submitted for identification and is thought to be *Corynebacterium ovis*. This is an animal pathogen and causes caseous lymphadenitis in sheep—infected sheep can readily be found in the district. To our knowledge only one case of human infection with this organism has been reported previously.

(b) Neisseria species

During the year, a small series of 45 cervical swabs was plated on Difco G-C media, and also on Thayer and Martin's improved selective medium for the cultivation of gonococci. This latter medium contains the antibacterials Vancomycin, Colistimethate and Nystatin.

Results—

—	Difco G–C Medium No. of Specimens	Thayer and Martin's Medium No. of Specimens
N. gonorrhoeae grown	10	14
Profuse growth of other organisms	28	0
Scanty growth of other organisms	17	21
No growth	0	16

In no case was a gonococcus grown from Difco medium and not on Thayer and Martin's medium. This latter medium is now used routinely for the cultivation of *N. Gonorrhoeae*.

Although no survey is in progress, seven strains of "relatively insensitive" gonococci have been isolated from patients referred for sensitivity tests because of apparent resistance to treatment. The range of sensitivity of these strains was:—

1 strain was sensitive to 0·125 I.U./ml. Penicillin.
1 strain was sensitive to 0·5 I.U./ml. Penicillin.
5 strains were sensitive to 1·0 I.U./ml. Penicillin.

Ref—

Thayer, J. D. and Martin, J. E.,
Public Health Reports, 1966, **81**, No. 6, 559-562.

(c) Loefflerella pseudomallei

Following the confirmation of a case of meliodosis on Thursday Island, twenty-four soil samples from Moa, Badu, Mabuiag, Bamaga, Horn and Thursday Islands were examined unsuccessfully for *Loefflerella pseudomallei*.

The Queensland Institute of Medical Research is examining pools of mosquitoes from the Cape York peninsula for arboviruses and has forwarded to this laboratory any cultures contaminated by bacteria. It was thought that these mosquito pools might be a source of *Loefflerella*. Two hundred and five specimens were examined but no Loefflerella species were found amongst the 206 organisms identified.

(d) Staphylococcus species

The number of cultures submitted for phage typing has dropped considerably this year. Most of the specimens received were from the Princess Alexandra Hospital. Five country hospitals sent in cultures because of infection in the nursery. The survey of staphylococcal infections in natives in Rabual continued. Over all, Group I strains, e.g., phage type 80/81, are still the most frequent type and accounted for almost 30 per cent. of the strains typed. During the year, a new phage, No. 85 was added to the basic set and 11 strains have been typed with this.

(e) Enteric Organisms

There has been a marked increase in this work due to several outbreaks of dysentery in the summer.

Nineteen different *Salmonella* serotypes were isolated and these together with their source are set out in Table CVII. The phage typing was done at the Institute of Medical and Veterinary Science, Adelaide. Sixty-two serotypes were isolated from 52 patients. Salmonella variants isolated included a *S. bredeney* which was non-motile and a *S. thompson* which was indol positive.

TABLE CVII

SALMONELLA SEROTYPES ISOLATED

(1st July, 1966, to 30th June, 1967)

Salmonella Type			Source			
Serotype	Phage and Fermentation Type	Group	Miscellaneous	Holiday Resort	Sewerage from Holiday Resort	Cooktown Aboriginal Settlement
S. typhimurium	Not typed	B	3	6	..	..
	U237, ferment type 1	B	..	14	..	..
	U235, ferment type 1	B	..	1	..	..
	Type 1 var.5, ferment type 10	B	..	1	..	..
S. chester		B	3	..	1	..
S. bredeney		B	1	1	1	..
S. ball		B	..	..	..	1
S. singapore		C1	..	2	..	..
S. thompson		C1	..	..	..	1
S. muenchen		C2	..	1	..	1
S. litchfield		C2	..	..	..	1
S. breukelen		C2	..	..	..	2
S. bovis morbificans		C2	..	1	..	..
S. typhi	E_1	D	1	..	..	..
S. eastbourne		D	1	..	..	1
S. enteritidis		D	1	..	..	1
S. anatum		E	1	2	..	..
S. meleagridis		E	1	..	..	..
S. orion		E	2	8	..	..
S. poona		G	..	..	..	1
S. oonderstepoort		H	..	..	..	1
S. wandsbek		Ungrouped	..	..	..	1
Total			14	37	2	11

Salmonella typhi, phage type E, was isolated from a nursing aide, who developed typhoid fever at an old people's home at Laidley. A carrier was found amongst the inmates. The strains from the patient and carrier were the same phage type.

As part of an investigation of an outbreak of gastroenteritis in New Britain, 34 faecal specimens from children aged 3 months to 2 years, were examined. No enteric pathogens were isolated.

The aboriginal settlement near Cooktown experienced an extensive outbreak of gastroenteritis about December 1966. Three hundred and twenty-nine specimens were examined and *Salmonella* species were grown from 11 patients. There were 10 different serotypes involved.

Only 8 strains of *Shigella* species were isolated during the year and all were *Sh. sonnei* except one strain of *Sh. dysenteriae Type* 2. Six of these strains were from Cooktown specimens.

Enteropathogenic coliforms were grown from 9 patients, 6 of whom were from the Maternal and Child Welfare Department.

GASTROENTERITIS AT A HOLIDAY RESORT

An epidemic of gastroenteritis occurred at a holiday resort on 20th November, 1966. At this time 18 guests and 8 staff members became ill. The main symptoms which were mild in nature were abdominal cramps, vomiting, and diarrhoea, with a short incubation period. Over a period of 19 weeks, from the onset of the epidemic, 688 cases reported to the surgery at the resort. These included 400 guests and 288 of the staff. Some of the staff members had more than one episode of illness.

The epidemic was well established, 200 persons having become ill, before the first two specimens were submitted to the laboratory on December 1st, 1966. These two faecal specimens were obtained from guests, after treatment with Kaomycin had been given, and no pathogens were grown.

From December 4th, all guests arriving were given a supply of Enterovioform tablets with instructions to take them as a prophylatic measure. These were also provided for all the staff.

By December 14th, 366 cases had been reported. A bacteriologist with an assistant from this laboratory visited the resort and investigated the situation. Rectal swabs were taken from 57 staff members who handled food and samples of food were collected, also swabs from benches in the cold rooms, kitchen and snack bar. Food handling techniques were investigated by a health inspector and these were altered where necessary. The use of bulk pasteurized milk ceased. Despite the fact that the outbreak was entirely consistent with food poisoning, no pathogens were isolated from the food handlers or the food itself. Virological and chemical examinations were similarly unrewarding.

As the cases continued to occur, on December 19th a Departmental team including a bacteriologist again went to the resort. All food handlers were again instructed on kitchen and personal hygiene and were given a five day course of Neomycin. At this stage only bulk powdered milk was used for cooking, no uncooked food was served and all water for human consumption was boiled.

As 47 cases of gastroenteritis occurred between December 19th and 24th, further rectal swabs were taken from 62 food handlers even though they were just completing their course of Neomycin therapy. Once again no pathogenic organisms were grown from the foodstuffs or rectal swabs. Faeces from 34 patients were submitted and were cultured, without success, over an eight week period but it was later learned the patients had all been given Enterovioform and/or Kaomycin before the specimens were collected.

On January 9th, *Salmonella typhimurium* phage type U235, fermentation type 1, was isolated from a guest who relapsed after Neomycin treatment. Two days later *S. typhimurium,* phage type 1 var. 5, fermentation type 10 was grown from another guest.

Sporadic cases continued to occur amongst both staff and guests and on 13th February, specimens from 66 food handlers were examined. All had had no drugs for several weeks. Salmonella species were grown from 28. Initially *S. typhimurium* was the predominant serotype and only one cook had *S. orion.*

The carriers were either sent from the resort for a short period or were given duties which did not involve food handling. The carriers of *S. typhimurium* were cleared fairly quickly and no salmonella of this serotype was isolated after 29th March. *Salmonella orion* became the predominant serotype by 29th March but all except one of the staff had had three negative cultures by April 24th. Five staff members had two different salmonella serotypes isolated and from one food handler, 3 different serotypes were recovered at different times. This change in serotypes is regarded as being evidence of gross contamination of the environment. *Salmonella chester* and *S. bredeney* had been isolated from the sewerage.

The distribution of serotypes amongst the staff was as follows:—

Serotype	No. of Staff
S. typhimurium	16
S. orion	3
S. anatum	1
S. bredeney	1
S. singapore	1
S. typhimurium followed by *S. orion*	2
S. typhimurium followed by *S. anatum*	1
S. singapore followed by *S. orion*	1
S. muenchen followed by *S. orion*	1
S. typhimurium followed by *S. bovis morbificans* and then by *S. orion*	1

There is no doubt that this epidemic was due to Salmonella food poisoning.

This epidemic was due to salmonella and the fact that salmonella organisms were isolated readily when drugs were ceased emphasizes the futility of expecting a laboratory diagnosis when all persons concerned were receiving therapy. Antibiotics such as Neomycin remove all bacterial flora without curing the patient and merely delay diagnosis. Antibiotics appear to have no significant effect on the carrier state.

URINALYSIS

A high proportion of urine specimens received in this laboratory are sent from country centres and, as they are often over 24 hours in transit, are unsuitable for culture. In an attempt to overcome this problem it was decided to conduct a trial comparing the results obtained with the Dip-inoculum transport medium developed by Mackay and Sandys with those obtained from culturing fresh urine. The trial was made with the co-operation of a convalescent home and the procedure adopted was as follows:

The spoons of media provided were dipped into the urine as soon as it was collected and the urine was bottled and stored in the refrigerator. The urines, packed in ice, and the media spoons were brought to the laboratory by 9 a.m. each morning. Thus the specimens were seldom more than 3 hours old and had been kept cold. The spoons were incubated and counts calculated according to Mackay and Sandys. A calibrated loop was used to estimate the bacterial count of the urines.

Results of the 165 specimens tested—

—	No. of Specimens	Per Cent.
Approximately the same count	95	57·5
Count of the same order (0–10,000 orgs./ml. 10,000–100,000 orgs./ml. 100,000 orgs./ml.)	31	18·8
Count on spoon in a higher order than urine count	29	17·6
Count on spoon in a lower order than urine count	10	6·1

Ten specimens were kept at room temperatures for 24 hours. Of these, 3 specimens were sterile on arrival and after 24 hours.

Seven specimens with 500-8,000 orgs./ml. on arrival grew more than 100,000 orgs./ml. after standing for 24 hours.

Culture results using transport media spoons approximated results on fresh urine in 76% of these specimens.

Ref:—

Mackay, J. P. and Sandys, G. H., Brit. Med. J., 1965, **2,** 1286-1288.

Mackay, J. P. and Sandys, G. H., Brit. Med. J., 1966, **1,** 1173.

MYCOLOGY

Apart from Candida species the following fungi have been grown.

Aspergillus species—1 isolation from an ear infection.

Crytococcus neoformans—1 isolation from a lung tissue.

Microsporum canis—5 isolations from scalp scrapings.

Microsporum gypseum—1 isolation from scalp scrapings.

Trichophyton tonsurans—1 isolation from scalp scrapings.

Sporotrichum schenkii—2 isolations from skin lesions.

PARASITOLOGY

Once again the work in this section has increased greatly due to continuance of surveys at the Brisbane Special Hospital and on Palm Island.

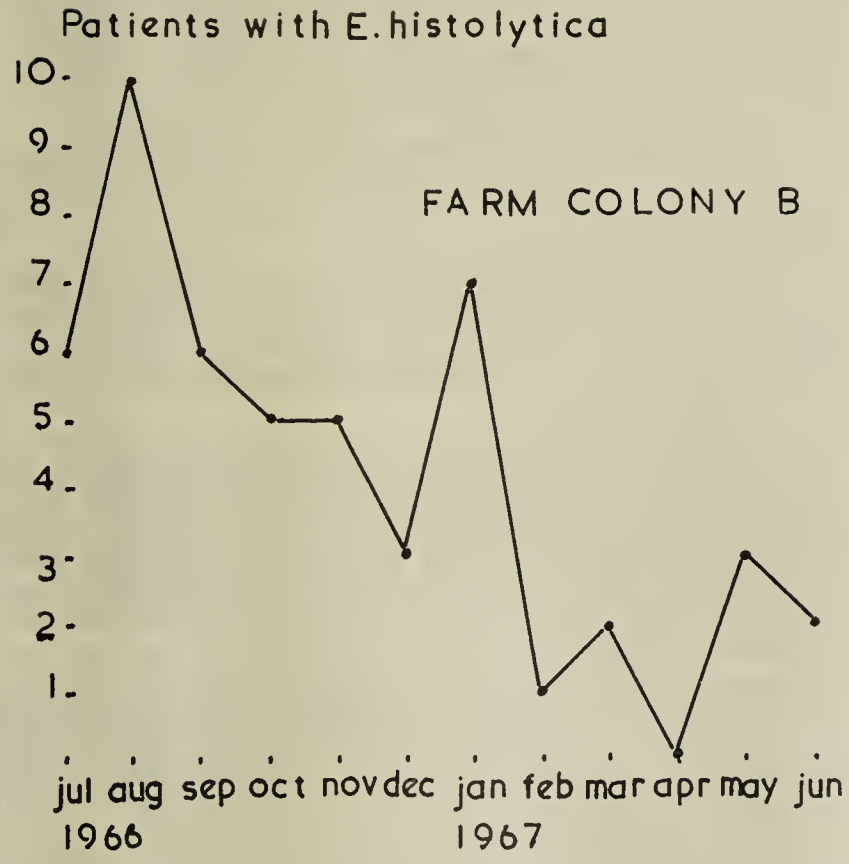
The intensive campaign against *Entamoeba histolytica* in the two wards, F.C.A. and F.C.B. at the Brisbane Special Hospital has effected a considerable reduction in the incidence both of cysts and of ova.

The results are:—

—	F.C.A.	F.C.B.
Total Number of Patients examined ..	118	137
Total Number of specimens examined ..	513	1,414
Number of patients with > 3 specimens examined	93	117

FIGURE I

Incidence of *E. histolytica* at Farm Colony B.
(July 1966 to June 1967)



Results of patients from whom more than three specimens were examined. (Results expressed as percentage of patients).

—	F.C.A.	F.C.B.
Entamoeba histolytica trophozoites ..	15	17
Entamoeba histolytica cysts	29	21
E. histolytica trophozoites and/or cysts ..	35	35
Entamoeba coli cysts	59	55
Iodamoeba butschlii cysts	8	3
Giardia lamblia cysts	34	48
Ascaris lumbricoides ova	0	0
Hookworm ova	3	3
Strongyloides larva	11	0
Hymenolepis nana ova	34	21
Trichuris trichiura ova	77	54
Enterobius vermicularis ova	3	8
Red blood cells	23	15
White blood cells	12	16

In F.C.A. the percentage of patients found with *Entamoeba histolytica* trophozoites and/or cysts dropped from 48 last year to 35 this year. Also the incidence of hookworm infestation in this ward fell from 22 per cent. to 0·3 per cent. In F.C.B. the incidence of *E. histolytica* infections dropped from 40 per cent. to 35 per cent. However, a study of monthly results showed there was a monthly average of 6 patients with *E. histolytica* from July to December, 1966, and a monthly average of only 3 patients from January to June, 1967. (See Figure I).

Two other wards at the Brisbane Special Hospital were investigated during the year. In the results below, figures are expressed as percentages of the specimens examined.

—	Male Ward 4	Female Ward 5
Entamoeba histolytica cysts	8	3
Entamoeba coli cysts	33	10
Iodamoeba butschlii cysts	1	0
Giardia lamblia cysts	5	2
Ascaris lumbricoides ova	0	0
Hookworm ova	1	0
Hymenolepis nana ova	3	0
Trichuris trichiura ova	57	14
Enterobius vermicularis ova	1	0
Balantidium coli trophozoites	0·3	0
Red blood cells	4	0·5
White blood cells	4	0
Number of specimens examined ..	278	175

During the year one tapeworm, *Taenia saginata,* was indentified from a Brisbane patient and cystic material from a patient at Nambour was indentified as the hydatid state of *Echinococcus granulosus.*

This year a parasitological survey of the aboriginal settlement at Yarrabah has been done. The results from Palm Island and Yarrabah are below. (The figures are expressed as percentages of people examined.)

—	Palm Island %	Yarrabah		
		Total %	Children 0–4 Years %	Children 5–12 Years %
Entamoeba histolytica cysts	10	13	7	20
Entamoeba coli cysts	49	37	20	52
Iodamoeba butschlii cysts	3	3	3	5
Giardia lamblia cysts	18	22	45	31
Ascaris lumbricoides ova	10	5	11	8
Hookworm ova	1	0·3	0	0
Strongyloides stercoralis larva	2	4	2	4
Hymenolepsis nana ova	18	16	17	30
Enterobius vermicularis ova	1	0	0	0
Trichuris trichiura ova	72	72	62	90
Red blood cells	9	9	11	16
White blood cells	2	2	3	2
Total number of people tested	1,181	740	152	192
Number of specimens examined	1,910	805	170	224

CIGUATERA POISONING

On October 25th, 1966, a professional fisherman from Gladstone sold through the Fish Board in Brisbane 551 lb. of narrow-barred mackerel (*Cybium commersoni* (*Lacepede*)). A fish vendor purchased 96 lb. of this, consisting of four mackerel, on October 25th. This fish was then transported in a refrigerated van to the Southern Downs where it was sold in a number of towns including Dalby, Miles and Roma. The fish when purchased appeared fresh and smelt normal.

Two of the fish were cut up and sold and caused no ill effects in those who ate them. Steaks cooked and eaten from the other two fish, however, caused a sudden violent illness in 16 persons at Roma, 6 at Miles and 8 at Dalby.

The incubation period was short, from 2½-4 hours, in the majority. The frequency and type of symptoms which occurred were—

Total patients	30
Severe abdominal pain	22
Headache	21
Tingling in hands, feet and limbs	20
Dizziness	19
Vomiting	15
Diarrhoea	12
Disturbances of taste	11
Double vision	2

The tingling sensation in the limbs was a prominent feature and in many this persisted for weeks after recovery from the other symptoms. The period of subsequent disablement varied from 2 days to one month. There were no deaths.

At first it was thought that the symptoms were suggestive of botulism and initial investigation was directed along those lines. Samples of the fish were obtained from Roma and these all appeared fresh and had no unpleasant odour. No pathogenic organisms were grown from aerobic or anaerobic cultures. Guinea pigs inoculated with heated and unheated fish extracts did not die.

As botulism was excluded by the recovery of the patients and the laboratory investigations the fish was then tested for evidence of Ciguatera poisoning. It is difficult to prove the presence of these toxins since kittens and mongooses appear to be the only susceptible animals. Three samples of fish were tested, No. 1 and No. 3 which had caused illness in humans and No. 2 which had been eaten with impunity.

A half-grown cat, 3 lb. 2 oz., was fed 3 oz. of specimen No. 1 at 2 p.m. By 8 a.m. the following morning the cat appeared distressed, its back legs were weak and were half-dragged when the animal moved with a staggering gait. No excessive salivation or diarrhoea was noted. By 4 p.m. that day the cat's legs appeared to be stronger. It slowly improved and two days later was quite recovered.

Five days later the cat was fed 3 oz. of specimen No. 2. The animal showed no ill effect from this fish.

Next day, 3 oz. of specimen No. 3 was fed to the cat at 11 a.m. By 8 a.m. the next day the animal was very ill. Its back legs were completely paralysed; the front legs were very weak and the animal could just raise itself. It appeared unable to hold up its head, had gasping respiration, excessive salivation and some signs of diarrhoea. As it appeared moribund the animal was killed.

The cat's symptoms, after eating specimen No. 1, fit the symptoms described in reports. Even more striking was the effect after eating specimen No. 3. These toxins are cumulative and several human cases have been noted where ingestion of toxic fish a second time has produced much more severe illness and even death.

Ciguatera poisoning is rare in Australia but there have been reports of illness following the consumption of coral trout in north Queensland. It is especially rare in southern Queensland and particularly in association with mackerel.

The fish apparently accumulate a toxin from their diet. The toxin will withstand heating as in normal cooking and there is no way of detecting a potentially poisonous fish either by the appearance, smell or taste.

THE TUBERCULOSIS LABORATORY

The laboratory is recognized as the reference centre for tuberculosis in Queensland and is one of the two reference centres for Atypical Mycobacteria in Australia. During the year 69 cultures were received from New Guinea, also cultures from Victoria, New South Wales and Queensland laboratories, for identification. Reference cultures have been forwarded, on request, to Dr. Jaroslav Mysak, Olomouc, Czeckoslavakia; Dr. Schaefer, Denver, Colorado; Dr. Schonell in Edinburgh, Dr. Sant at the Haffkine Institute, Bombay and to the Public Health Laboratory in Perth, Western Australia. Four medical officers and two technologists have attended courses of instruction given by the laboratory staff.

During the year *Mycobacterium tuberculosis* was isolated from 192 patients, 149 from previously untreated patients and 43 from patients previously treated. One bovine strain was isolated from a female patient aged 54 in Brisbane with pulmonary disease. Two avian strains were isolated from patients.

Chromogenic Anonymous Mycobacteria were isolated from 79 and non-chromogenic Anonymous Mycobacteria from 97 patients. These cultures were not classified as they were grown on one tube of media only.

Only when Anonymous Mycobacteria were cultured on two or more of the four tubes routinely inoculated from each specimen, were the strains investigated further. This involved cultures from 191 patients and the classification of these strains is set out hereunder, using Runyon's system.

Classification	*Number of Patients*
Group I	4
Group II	22
Group III	94
Group III Raddish	4
Group III *M. avium*	2
Group IV *M. fortuitum*	13
Group IV sp.	5
Chromogenic Group IV	14
Group IV *M. phlei*	2
Nocardia sp.	3
Group III and IV including *M. fortuitum* and Raddish	15
Group II and III including Raddish	5
Group II, III and IV including *M. fortuitum, Nocardia* and *M. phlei*	7
Total	190

All the cultures of *M. fortuitum* were from sputum except one which was isolated from a leg ulcer of a 34-year-old man from Mackay. The ulcer developed 10 weeks after the patient had been injured by a stingray. There have been only two previous isolations of *M. fortuitum* from skin lesions, in this laboratory.

M. ulcerans was grown from an ulcer on the arm of a female aged 70 years from Glen Innes, N.S.W. *Nocardia asteriodes* was isolated from a lesion on the hand of a patient from Newcastle, N.S.W.

Group II Scotochromogens were isolated from pus from the glands of two children with cervical adenitis. Three cultures from cervical nodes in children were referred for identification, two from Geelong, Victoria and one from the Royal Brisbane Hospital.

Group I Anonymous Mycobacteria were repeatedly isolated on nine occasions over a period of three months from the sputum and gastric aspirates of a soldier aged 36 from Brisbane. He had pulmonary disease which failed to respond to chemotherapy and the lung was resected. Atypical acid-fast bacilli were present in the smears from the lung tissue but the cultures were negative. Since the lung resection, all cultures have been negative.

The similarity of Group III Raddish bacilli to *M. tuberculosis* in culture is striking and could easily cause confusion to the inexperienced. The differentiation can quickly be made by the Tween 80 degradation test. The Raddish bacilli are probably not pathogenic.

Routine sensitivity tests are made on all newly isolated cultures of *M. tuberculosis* and on all Anonymous Mycobacteria which grow on two or more tubes. The Resistance Ratio method is employed. Each culture is tested with streptomycin, para-aminosalicylic acid, isoniazid, Viomycin, cycloserine and ethionamide. Sensitivity tests with capreomycin, ethambutol and thiacetazone are made on request. Tests with the latter two drugs have only been included this year.

A trial was set up to test the sensitivity of *M. tuberculosis* and the Anonymous Mycobacteria to Kanamycin. Both *M. tuberculosis* and *M. ulcerans* were found to be sensitive. Most other Anonymous Mycobacteria were resistant in varying degree. Group III strains were found to be the most resistant.

M. tuberculosis is sensitive to capreomycin, ethambutol and thiacetazone. Group III strains show some sensitivity to ethambutol but are resistant to both capreomycin and thiacetazone. Group I strains appear to be sensitive whilst *M. fortuitum* is resistant to all three drugs.

During the period January to December, 1966, *M. tuberculosis* was isolated from 180 patients; of these 126 were untreated and 54 had previously been treated. The results of the sensitivity tests with these strains are set out in Table CVIII.

HUMAN INFECTIONS WITH MYCOBACTERIUM AVIUM

During the year, *Mycobacterium avium* was isolated from 2 patients. These constitute the first human infections with this organism in Queensland and possibly in Australia.

The first patient, J. M., a 58-year-old male, was found by routine X-ray, to have a small pulmonary lesion in March 1966. His chest X-ray showed minor infiltration in the right lung but he was symptomless apart from slight morning cough. The organism was pathogenic for fowls and rabbits, but not

TABLE CVIII

RESULTS OF SENSITIVITY TESTS FOR 180 STRAINS OF *M. tuberculosis*

(January to December, 1966)

	Total: 126	
	Number	Per Cent.
Untreated Patients—		
Cultures resistant to Strep. P.A.S. and I.N.A.H.	0	0
Cultures resistant to Strep. P.A.S.	1	0·8
Cultures resistant to Strep. I.N.A.H.	0	0
Cultures resistant to P.A.S. and I.N.A.H.	4	3·1
Cultures resistant to Strep. only	1	0·8
Cultures resistant to P.A.S. only	3	2·4
Cultures resistant to I.N.A.H. only	2	1·6
	Total: 54	
	Number	Per Cent.
Treated Patients—		
Cultures resistant to Strep. P.A.S. and I.N.A.H.	1	1·9
Cultures resistant to Strep. P.A.S.	1	1·9
Cultures resistant to Strep. I.N.A.H.	1	1·9
Cultures resistant to P.A.S. and I.N.A.H.	3	5·7
Cultures resistant to Strep. only	1	1·9
Cultures resistant to P.A.S. only	1	1·9
Cultures resistant to I.N.A.H. only	7	13·3
Overall resistance to Strep.	4	7·6
Overall resistance to P.A.S.	6	11·4
Overall resistance to I.N.A.H.	12	22·8

for guinea pigs. It was resistant to streptomycin, P.A.S., I.N.A.H., Viomycin, cycloserine and ethionamide. The culture was sent to Dr. Schaefer of the National Jewish Hospital, Denver, Colorado and he confirmed that it was *M. avium* type I. The organism has since been re-isolated from the sputum.

Another patient, A.C., a male aged 56, was first seen in July, 1963, following a routine chest X-ray which showed rather indefinite markings in both apices and right first intercostal space. He was clinically well except for cough with minor sputum, from which an atypical organism was cultured. The sputa remained negative in November, 1963, and October, 1964. At this time a new opacity was seen in the left upper zone and he was admitted to the Chest Hospital in December 1964, for investigation. He was thought to have tuberculosis and treated with streptomycin, P.A.S. and isoniazid until March, 1965, when he was discharged to continue on P.A.S. and isoniazid. He remained well until September, 1965, when atypical organisms were again isolated from the sputum. In January, 1966, the sputum cultures were negative. In May, 1966, a dense opacity was seen in the left upper zone with possible cavitation. By March, 1967, he was weak and tired and progressive cavitation was observed in the left upper zone. He was readmitted to the Chest Hospital and *M. avium* was isolated from the sputum. The identity of the culture has been confirmed by growth characteristics and animal pathogenicity tests. It has since been confirmed as *M. avium* type I.

A third patient, R. L., a male aged 54, was first seen in December, 1960, when routine X-ray of his chest showed increased markings in both upper zones. He had a history of slight exposure to silica in a foundry and had had a haemoptysis in 1966. A tuberculin test was weakly positive and the sputum was negative for *M. tuberculosis*. He was kept under observation, radiologically unchanged, until December, 1964, when some increased opacity was noticed in the left midzone. In December, 1966, his X-ray showed increased markings in both upper zones. An organism was cultured from the sputum, which appeared identical with cultures from the previous two patients. Pathogenicity tests in rabbits and fowls appeared to prove its identification as *M. avium*. The culture was, however, forwarded to Dr. Schaefer for confirmation and he advised that it is a type of Battey bacillus, serotype Davis, which occurs quite frequently in lymphatic lesions of swine and cattle in U.S.A. and also in human infections. It has not yet been found as a cause of tuberculosis in birds. This organism apparently can only be distinguished from *M. avium* by serological methods.

A CASE OF SWIMMING POOL GRANULOMA IN AUSTRALIA

A 27-year-old male consulted a dermatologist in Melbourne in July, 1963, giving a history of a lesion starting as a "boil" on his right leg in 1958. Since then it had crusted and had discharged pus at times. He was known to have frequented a public sea-water pool, built out into the sea and enclosed with pylons.

On examination a granulomatous plaque with a psoriasiform scaling surface and measuring one and a-half inches by one inch was found over his right knee and a presumptive clinical diagnosis of Swimming Pool Granuloma was made. A biopsy taken at this time revealed a lesion similar to tuberculosis verrucosa cutis. The Mantoux test late in 1965 was strongly positive.

Direct smears for acid-fast bacilli were carried out in Melbourne and were negative but one colony of acid-fast bacilli was grown at 37°C. and one at 24°C. A second culture of the lesion again produced acid-fast bacilli.

These cultures were forwarded to this laboratory for indentification and were found to be *Mycobacterium balnei*. Numerous subcultures were grown. Growth at room temperature appeared in 14 days and at 32°C. in 10 days, but there was no growth at either 37° or 45°C. When freshly growing cultures were exposed to light they developed a marked yellow colour. However, when grown in the dark no yellow colour was produced.

Colony morphology showed round elevated colonies with a spreading of growth around the colonies as they aged. This spreading growth was concentrically arranged in irregular contours or terraces towards the periphery. The niacin test was negative. The arylsulphatase test was done and a molar concentration of ·001 after 7 days gave a ± result.

Animal inoculations were also made with the suspension prepared for the subcultures. An 0·5 ml. subcutaneous injection into a guinea pig showed no reaction after 7 weeks. Intraperitoneal and intravenous injections of 0·1 ml. of suspension into mice produced a thickening of the tail after 3 to 4 weeks. This then ulcerated but began to heal about a week later when crusts began to form. Histological examination of the tail revealed granulomatous lesions in which numerous beaded acid-fast bacilli were present. These reactions are characteristic of those found with *M. balnei*. The surgically excised specimen was subsequently cultured at Fairfield Hospital and the presence of *M. balnei* was confirmed.

Dr. Bauer described this case in the Australian Journal of Dermatology, (1966), VIII, 241, and included the bacteriological report from this laboratory. He states "this appears to be the first case of swimming pool granuloma due to *M. balnei* recognised and reported in Australia. Although most overseas reports have been of epidemics caused by gross infection of swimming pools, sporadic cases such as this one must occur. The awareness of such an entity in Australia will aid the recognition of further cases."

VIROLOGY

The Virology section received 542 sera and 1,824 specimens for virus isolation. Of the latter, 952 were from clinical cases and 872 from the survey of toddlers at the Sandgate Maternal and Child Welfare Home.

Eighty-seven virus strains were isolated from the clinical specimens (67 patients) and more than 500 from the toddlers' specimens.

Viruses were isolated from patients with a variety of clinical conditions, including aseptic meningitis, pyrexial illness, rubella and also from three "cot death" infants. See Table CIX.

Interpretation of the role of the isolates was clear in some cases, e.g., herpes simplex from a cold sore, and impossible in others, such as the echovirus found in faeces but not the tissues of the neonate dying suddenly. The cerebrospinal fluid isolates were accepted as being of aetiological significance, both echovirus type 14 and coxsackievirus type A9 being well known as causes of aseptic meningitis. The viruses isolated from faeces of cases with aseptic meningitis were tentatively regarded as being causative, but one patient from whom two possible pathogens were isolated illustrates the difficulties in these cases.

Ten cases of congenital rubella were dignosed by virus isolation. Two babies appeared normal though one was excreting virus from its naso-pharynx and the placenta of the second contained virus. The other cases consisted of three spontaneous abortions at several months gestation, two therapeutic abortions, one still-birth, and two babies with the "expanded rubella syndrome", one dying at the age of 5 months and one still alive at the age of one month. Viruses were isolated from two cases of myocarditis in neonates. From the throat of the surviving case coxsackievirus type B5 was isolated. This is a well known cause of myocarditis in the very young. Echovirus type II was isolated from the myocardium of the fatal case. This virus has not previously been reported as causing myocarditis, but must be regarded as the aetiologic agent in this illness.

Group A coxsackieviruses were isolated from all tissues examined in two cases of sudden and unexpected death, one an infant, the other a child 3 years old. The significance is not certain, but the virus infections are strongly suspected as the cause of death.

In April, faeces were received from 34 infants with gastro-enteritis occurring during a severe epidemic in the Gazelle Peninsula, New Britain. Viruses were isolated from eight, echovirus type 19, coxsackievirus type A4 an adenovirus and six untyped enteroviruses. A viral aetiology for the outbreak was not established, as the finding of several different strains of virus in this proportion of healthy children living in the tropics is not unusual.

The pathogen-free mouse colony, established at the Animal Breeding Station from a nucleus of germ-free mice is progressing well and has recently begun supplying litters. Until mid-June virus isolations were attempted in mice bred from non-pathogen-free mice. That temporary arrangement was of great value and allowed the processing of most specimens and the isolation of many strains of virus. However, diseases endemic in the mice caused some difficulties, indicating the desirability of using pathogen-free mice when possible.

Satisfactory techniques for identifying group A coxsackieviruses isolated in mice were evolved. All specimens received since the laboratory opened in November, 1965, were tested and 175 viruses were isolated and identified.

Most of these coxsackievirus isolates were from Creche patients, type A2, A10 and A3 predominating. Smaller numbers of types A1, A4 and A8 were isolated. The viruses isolated to date have all been typed by complement fixation tests using typing sera made in adult mice and mouse carcase infected with the unknown virus as antigen.

TABLE CIX

VIRUS ISOLATIONS FROM CLINICAL CASES

(July 1st, 1966 to June 30th, 1967)

Diagnosis	Specimen	Virus	Number of Cases
Aseptic meningitis	C.S.F.	coxsackievirus type A9	8
Aseptic meningitis	C.S.F.	echovirus type 14	2
Aseptic meningitis	Faeces	echovirus type 26	2
Aseptic meningitis	Faeces	echovirus type 26 and coxsackievirus type A4	1
Aseptic meningitis	Faeces	coxsackievirus type A8	1
Aseptic meningitis	Faeces	coxsackievirus type A9	1
Aseptic meningitis	Faeces	coxsackievirus type B5	1
Aseptic meningitis	Faeces	adenovirus	1
Rubella (congenital)	Placenta	rubella	5
Rubella (congenital)	Organs	rubella	3
Rubella (congenital)	Throat	rubella	2
Rubella (exanthem)	Throat	rubella	5
Parotitis	Throat	mumps	3
Conjunctivitis	Eye	herpes simplex	2
Conjunctivitis	Eye	adenovirus type 3	1
Vesicular rash (neonatal)	Vesicle	herpes simplex	1
Cold sores	Vesicle	herpes simplex	2
Vesicular rash	Faeces	echovirus type 25	1
Gastro-enteritis	Faeces	echovirus type 19	1
Gastro-enteritis	Faeces	enterovirus	6
Gastro-enteritis	Faeces	adenovirus and coxsackievirus type A4	1
Croup	Throat	parainfluenza type 1	1
Myocarditis (neonatal)	Throat	coxsackievirus type B5	1
Myocarditis (neonatal)	Myocardium	echovirus type 11	1
Cot death	Faeces	coxsackievirus type A2	1
Cot death	Organs	coxsackievirus type A10	1
Cot death	Faeces	adenovirus type 2 and enterovirus	1
Sudden death (neonatal)	Faeces	echovirus type 22	1
Sudden death (child)	Organs	coxsackievirus type A9	1
Pyrexial illness	Throat swab / Faeces	adenovirus	1
Pyrexial illness	Faeces	adenovirus	2
Pyrexial illness	Faeces	adenovirus type 2	1
Inapparent infections—			
Fractured arm	Faeces	coxsackievirus type A9	1
Fractured skull	Faeces	coxsackievirus type A9	1
Collapsed vertebra	Faeces	echovirus type 14	1
Death by accident	Faeces	enterovirus	1

EPIDEMIOLOGICAL SURVEY OF VIRUSES AT CRECHE

The epidemiological survey of viruses infecting the children at the Sandgate Maternal and Child Welfare Home continued through the year. The survey is of value in predicting virus infections in the community at large, and it has been shown that patterns of infection in institutions for small children mirror those in the community. However, it has also been shown that as much information may be gained by sampling, say 20 children a week, as was done in our survey, as sampling several hundred people in the community.

Over four hundred enteroviruses were isolated in tissue culture, the main types being echovirus type 13 (83 strains), echovirus type 14 (100 strains) and coxsackievirus type A9 (42 strains). In addition 38 adenoviruses and the previously mentioned mouse isolations of group A coxsackievirus were found. The high isolation rate of echovirus type 14 and coxsackievirus type A9 paralled the isolation of the same viruses from cases of aseptic meningitis. That echovirus type 13 was not similarly found in clinical cases is probably due to the fact that it infequently causes aseptic meningitis and the mild illness which it produces is rarely referred for laboratory diagnosis.

In June, 1967, the number of faeces collected was halved and a collection of throat swabs was substituted. This allowed extension of the surveillance programme to include respiratory viruses, and in conjunction with the bacteriology department, bacterial throat pathogens and mycoplasma species.

Viruses which are almost certainly strains of Respiratory Syncytial virus were isolated from six children. This virus has not previously been isolated in Brisbane as special techniques necessary for its preservation were not employed before. It is a cause of severe bronchiolitis in infants, and, with the adenoviruses which were also known to be infecting some of the children in June, was the cause of at least some of the respiratory disease prevalent then.

Information regarding virus isolations from both clinical and Crêche specimens is sent every two months to the Melbourne Virus Diagnostic Group which reports and discusses similar information from each state. From its meetings a combined report is published in the Medical Journal of Australia, giving epidemiological information to all Australian practitioners.

LYMPHOGRANULOMA VENEREUM

The agent causative of lymphogranuloma venereum (L.G.V.) was isolated from the inguinal nodes of a young man, said to have been infected in the Northern Territory of Australia. The patient suffered a febrile illness with marked inguinal adenitis, progressing to fistula formation. Biopsy of the gland showed histology consistent with the condition. Paired sera, tested by complement fixation to antigens made of two members of the psittacosis-L.G.V. group of agents showed at least an eight fold rise in titre (32 to greater than 256 with *Miyagawanella ovis* and 40 to greater than 320 with ornithosis).

MYCOPLASMA PNEUMONIAE SEROLOGY

An analysis was made of the results of testing 1,281 patients for serological evidence of infection with *Mycoplasma pneumoniae*. The cases were grouped in categories according to the height of the titre and whether or not a four-fold change in levels had occurred. Other diseases proved to exist at the time of taking of the specimens were noted.

There were 369 reactors, the majority (315) having titres of 32 or less, with no change in level. Twenty-four had at least a titre of 128. There is a suggestion from the figures that, in the lower range of titres (64 or less), a four-fold change was associated with the presence of another disease, especially Q. fever. Stationary low titres were not obviously associated with other diseases. It appeared that a four-fold rise in titre to 128 or more occurred in patients with no other disease and with a typical clinical picture of respiratory infection and fever, as did all stationary titres of 256 or more and most stationary titres of 128.

A further series of sera has now been tested and 136 reacting patients found. Eleven had titres of 128 or more.

MIYAGAWANELLA OVIS SEROLOGY

It has been noticed that some patients with pyrexial illnesses have high or rising titres to *Miyagawanella ovis* and that some, at least, have no clinical features supporting a diagnosis of psittacosis or lymphogranuloma venereum.

In the past year 24 patients were found to have single specimens with high titres or four-fold rises in paired specimens. Four of the ten patients with titres of 128 or higher had psittacosis (one clinically diagnosed), cat-scratch fever (one clinically diagnosed) and lymphogranuloma venereum (one proven, one clinically diagnosed), and their antibody findings were to be expected. Five patients had Q fever and one brucellosis and the question of anamnestic responses arose. Twelve of the 24 were known to have contact with cattle and/or birds.

It is proposed to investigate these and future patients by epidemiological methods and by direct isolation attempts. There is a possibility that some of these patients, especially the abattoir workers, were infected by organisms related to *M. ovis* harboured by other animals and birds.

TOXOPLASMA SEROLOGY

Sera from 41 patients with ophthalmic abnormalities were tested by complement fixation. Two were positive at a titre of 1:8. Sera from 68 patients with lymphadenopathy, myocarditis or other abnormalities were also tested. Of those with lymphadenopathy three were positive in titres of 1:4, three at 1:8, three at 1:16 and two at 1:32. A titre of 1:8 or greater is regarded as evidence of active recent infection.

EPIDEMIOLOGICAL STUDIES OF TWO ABORIGINAL MISSIONS

Sera collected at Aurukun and Weipa Missions in October, 1965, were examined previously and recorded in the Annual Report of 1965-66. Initial studies showed that a high proportion of Aborigines from both missions had increased gamma-globulin levels (36 of 69 reported as + or ++). These sera were subsequently submitted to Dr. C. C. Curtin, Baker Institute of Medical Research, Melbourne for further detailed study. He found total serum protein levels similar to to those found in Melbourne Hospital patients by the same techniques but gamma-globulin levels were raised and albumin levels lowered. No significant differences were found between sexes and no significant increase in gamma-globulin levels occurred with age. Neither total protein or gamma-globulin level showed any significant correlation with sedimentation rate.

SUXAMETHONIUM SENSITIVITY

Two families were investigated because of the occurrence of scoline apnoea in one of their members. In both patients a low serum pseudo-cholinesterase was found and shown to be atypical by determination of their dibucaine and fluoride numbers.

When other members of each family were examined additional heterozygotes for pseudo-cholinesterase were found.

HISTOPATHOLOGY

During the year 8,690 biopsy specimens were received and from these, 11,364 sections were prepared and examined. From necropsy tissues from country area 463 sections were examined.

Skin neoplasms included 1,037 basal cell carcinomas, 602 squamous carcinomas, 216 keratoacanthomas, 890 naevi and 72 malignant melanomas. These melanomas were all referred to the Queensland Melanoma Project as were 6 lymph nodes containing melanomatous metastases.

Other lesions of both epidemiological and pathological interest were: Chromoblastomycosis (12), Sporotrichosis (4), Granuloma inguinale (1).

EXFOLIATIVE CYTOLOGY

The use of exfoliative cytology as a means of diagnosis of carcinoma of the lung was first undertaken in this laboratory in June, 1956, at the suggestion of the Director of Tuberculosis. The intention was that this technique would be an adjunct to the investigations for tuberculosis which the laboratory was already performing for the Chest Clinic in patients referred as a result of the mass radiography campaign.

As the availability of this service became more widely known, specimens were referred from the various thoracic annexes in the State, from hospitals in Brisbane and eventually from hospitals and practitioners in many of the country towns. This resulted in large numbers of specimens being submitted and a heavy work load being placed on the staff involved. This volume of work has been curtailed from time to time by persuading and assisting the pathology departments of the city hospitals to establish their own services. Notwithstanding the availability of this service at Brisbane hospitals and at a number of private pathologists, the number of specimens sent has continued to increase and in 1966 exceeded all previous years.

While carrying out this work we have endeavoured to assess its value by following up all patients investigated and correlating the cytological reports given with the final clinical diagnosis at the time of follow-up. This continuing assessment has shown that in the first few years the results were moderately successful in that about 60 per cent. of patients with lung carcinoma were found to have positive cytology. In 1963 this percentage had fallen to 35 and in 1964 to 22. In 1965 a different technique for preparing specimens was adopted and follow-up of patients investigated during this year showed improvement—43 per cent. of patients with clinical malignancy were found positive by cytology.

These disappointing figures have confirmed the growing conviction that the cytological investigation of lung carcinoma is inappropriate as a screening test and has little or no place in the investigation of outpatients for possible lung cancer. This view is reinforced by the conclusions of Andrews and Rosser (Thorax (1964), 19:279) who state that "exfoliative cytology has in no way superseded the usual methods of investigation and has failed as a simple screening test. It is best reserved for those cases in which other methods of investigation have failed and it should then be carried out with great attention to technical detail and by the examination of multiple specimens".

It is our view that the very heavy work load imposed by the continuation of the cytology service is not justifiable in the light of the results achieved. Bronchial cytology should be confined to laboratories attached to hospitals where patients can be fully investigated and close liaison can be maintained between the pathologist and clinician.

THE INSTITUTE OF FORENSIC PATHOLOGY

During the year 1,043 coronial autopsies were performed, an increase of 33 on the previous year. Many of these necropsies require extensive ancillary investigations such as bacteriology, biochemistry and histopathology before a certificate can be issued. Increasing use is being made of the virology laboratory as an ancillary aid to post-mortem diagnosis. Of necessity many specimens are referred to the Government Analyst's Department for toxicological examination and the excellent co-operation received from the staff of this department is much appreciated. Blood and urine alcohol estimations are made as a routine on all traffic accident fatalities over the age of 14 who die within 12 hours of the accident.

The bound volumes of post-mortem reports, from 1935 onwards are a unique source of research material. No similar records are available in Australia. These have been used by Dr. Derrick in a study of alcohol mortality.

Dr. B. Sherwood Mather of the University Department of Surgery is studying material obtained at the Institute in an investigation of the mechanical properties of the human body. The object of these investigations is the improvement of measures designed to protect vehicle occupants from the effects of road traffic accidents. The present investigation has been designed to measure the magnitude of forces required to cause a variety of common fractures of the leg. It is proposed to extend these investigations to include a study of the mechanical properties of the thoracic skeleton and viscera.

Of particular interest to the staff are the continuing investigations of the injury pattern in traffic accident fatalities, cot deaths and the cause of sudden death in asthmatics. Recently a student was assigned the project of comparing the pathology of persons dying in status asthmaticus with that of asthmatics dying suddenly from some other cause. Some preliminary work has been done to investigate the biochemistry of the vitreous humor as a means of determining the time since death.

The project of the Traffic Injury Sub-committee of the N.H.M.R.C. to obtain information concerning the causation and effects of traffic accidents in rural areas has been completed Traffic Accident and Personal Injury reports were collected from Government Medical Officers who wished to participate. Of a total 359 reports from Australia, 243 were collected in Queensland. The data has been analysed and is to be the subject of a paper by Dr. A. I. Adams of the School of Public Health and Tropical Medicine, Sydney.

The surveillance of reports from coronial necropsies in centres outside the metropolitan areas continues. Every encouragement is given to medical officers in country towns to submit tissues for microscopic examination when the diagnosis is in doubt at post-mortem. Tissues from 243 cases were examined during the year. Medical officers are also urged to submit specimens for alcohol estimation from all traffic accident fatalities, also from all cases where the recent consumption of alcohol may have been a factor in the cause of death. Frequently, advice is given concerning post-mortem technique and procedure by telephone to doctors in rural areas. A booklet on necropsy technique is almost completed and will be distributed to all Government Medical Officers and medical students.

A post-mortem (7492/54) was reviewed during the year and found to be a case of Subacute Necrotizing Encephalopathy in a child—the twenty-fourth case in the world to be reported.

MYOCARDITIS: ITS PRESENCE IN "NORMAL" HEARTS

A research project was commenced in January 1965, and concluded in December 1966 to determine the presence of myocarditis in "normal" hearts. This project was supported by a grant from the National Heart Foundation with Dr. Brand as Research Fellow.

Hearts which were apparently normal, from 236 persons on whom Coroner's necropsies were made, were examined. The criteria of normality used for this study were absence of any disease as determined by the history and post-mortem findings, death occurring within two hours of an accident, age less than 40 years, a heart normal in weight, size and structure and with minimal atheroma in the coronary vessels. Of the hearts examined 134 fulfilled these criteria.

Complete transverse sections were examined histologically at one ventricular level in 10 hearts, at 18 ventricular levels in a further 10 hearts and at 3 levels in the remaining 114 hearts. Spatial orientation was retained and all lesions found were plotted on diagrammatic cross sections.

A total of 445 lesions were found in the 134 hearts and these appeared to be scattered at random, although in some hearts the lesions were predominantly in one ventricle. The number of lesions found varied from 0 to 40 in any one heart and increased with the number of levels examined. Of the hearts sectioned at one ventricular level 40 per cent. contained lesions, of those sectioned at 3 levels 67 per cent. had lesions and at 18 levels nine of the ten hearts contained lesions. The diameter of the lesions varied from 20μ to 4 mm; 60 (13 per cent.) were more than 500μ in diameter, 30 (29 per cent.) from 200-500μ and 255 (58 per cent.) were less than 200μ. Many lesions showed destruction of cardiac muscle as well as cellular infiltration whilst in others the cellular infiltration occurred alone. The cellular infiltrate was predominantly lymphocytic but in some cases, macrophages, eosinophils, polymorphs, plasma cells and giant cells were found. Toxoplasma was discovered in one heart.

Of the 134 cases, 22 per cent. were females and in 54 per cent. of these hearts lesions were found at 3 ventricular levels. Of the remaining hearts from males, 68 per cent. had lesions at the three levels. Although the number of hearts in each of the four decades was too small for statistical analysis there did appear to be a predominance of lesions in the 10-19 years age group.

Virological examination of the hearts and faeces from 28 cases was made. An echovirus, type 6 and an enterovirus were isolated from two cases from the faeces, in neither of which were histological lesions evident in the heart. An enterovirus was also isolated from the faeces of one case with two minimal heart lesions only. No virus was isolated from the hearts. The ages of the persons from whom the viruses were isolated were 2, 5 and 7 years respectively—an age group where viruses commonly are recovered from the faeces.

Apart from the one case in which toxoplasma was found, there was no histological evidence of parasitic infection.

It would appear that histological evidence of myocarditis, with or without muscle damage, is common in the community. Caution must be exercised in the interpretation of its significance when found in the absence of supporting clinical evidence. Nevertheless, myocarditis can undoubtedly cause sudden death. The aetiology of the lesions seen in the hearts in this series was undetermined but is probably due to transient viral infections.

DURATION OF SURVIVAL IN TRAFFIC ACCIDENT FATALITIES

A retrospective study, supported by a grant from the Australian Road Research Board, to determine the duration of survival of traffic accident fatalities, was undertaken from the records at the Institute of Forensic Pathology. The survey covered the period 1946 to 1965 and included 2,081 fatalities. A similar survey was made in Adelaide and the results have been compared. It was found that, in Brisbane only 2·5 per cent. of all those who eventually died survived 30 days, and in Adelaide 3·8 per cent. There appears to be a higher proportion of very rapid deaths in Brisbane. A detailed analysis of the survival times in the two cities has been completed and submitted for publication.

This study is of importance in determining a satisfactory "cut off" period for statistical criteria for accident reporting. The error in using a 30-day period in reporting traffic accident mortality is less than 4 per cent. and it is recommended that this period be generally adopted.

ANALYSIS OF FREE FALLS FROM THE STORY BRIDGE INTO LAND AND WATER

At the request of the Department of Civil Aviation and supported by a grant from it, a study was made to investigate the effects on the human body when subjected to sudden deceleration into water or onto land. Previous surveys have been made of free falls of 178-193 feet from the Sydney Harbour Bridge and 239-250 feet from the Golden Gate Bridge in San Francisco. The Story Bridge was chosen as it provided a free fall of 85-110 feet, for comparison.

It was found that during the period 1935-1966, forty persons fell between 85 and 125 feet from the Story Bridge, Brisbane. Of the 40, 20 fell onto land with a fatality rate of 100 per cent., and 20 fell into water with 8 (40 per cent.) surviving. Of those falling onto land, 16 died instantly and four survived for periods of 1, 1½, 7 and 17 hours respectively.

The most common type of injuries received by those who fell into water were chest injuries and they consisted mainly of haemorrhage, fractured ribs and both pulmonary contusions and laceration. Superficial injuries and abdominal injuries were present but not severe. In comparison, those involved in fatal falls onto land suffered more severe superficial injuries, multiple bone fractures, chest injuries of a more severe nature and wider distribution but only relatively minor abdominal injuries.

A remarkable feature was that four of the eight persons who survived a fall of approximately 100 feet into water escaped injury apart from minor bruising.

AIRCRAFT CRASH AT WINTON

On 22nd September, 1966, a Vickers Viscount aircraft VH-RM1, on a routine flight from Mt. Isa, crashed at Winton causing the death of all 24 passengers and crew. Sixteen unburnt bodies had spilled out over a wide area, the remainder being incinerated in the main wreckage.

Two pathologists and an attendant were alerted and left within a few hours for Winton taking all necessary equipment. The pathologists visited the scene and personally supervised the removal of bodies. Each was labelled in turn, photographed *in situ* and removed with minimal disturbance to the wreckage. The incinerated bodies were placed in polythene bags and deposited in a kangaroo hunter's freezer trailer, together with the unburnt bodies. Excellent assistance was provided by Dr. Fleming and the local authorities and police at Winton.

All remains were recovered by 3 p.m. on 23rd September. They were stowed in a DC4 freighter and flown to Brisbane. The aircraft was unloaded within a hangar in privacy and the bodies transferred to the Institute of Forensic Pathology.

Detailed autopsies were carried out during the next two days after the bodies had been photographed and X-rayed. Wherever possible blood was taken for carbon-monoxide levels, specimens of lung were examined for fat embolism and also to detect volatile hydrocarbons. Mr. Romaniuk of the School of Dentistry gave valuable assistance in preparing dental charts and with problems of identification.

Identification of the remains was positively established by 25th September with the exception of two bodies which were identified by means of dental charts two days later. Means of identification included marks on clothing, personal possessions and documents, jewellery and watches, anatomical sexing, matching of fragments of bodies, dental restoration charts and in one case matching of cloth.

The sixteen bodies spilled from the aircraft showed similar injuries, differing only in degree. The skull was fragmented in all and all but two lost cranial contents.

All had extensive chest and abdominal injuries and multiple limb fractures. The injuries were consistent with a very severe whole body deceleration on contact with the ground. There was no evidence of exposure to an explosion but ten had singeing of the hair of the head or hands and three had flash burns of the face and hands. These burns were probably attributable to the bodies passing momentarily through flame as they were spilled from the plane as it broke up in flight.

All occupants, six passengers and two pilots, assumed to be seated forward of row 11 were incinerated. They were subjected to intense heat with loss of most of the limbs and head. Much metallic debris was found in association with the remains. It was considered likely that the front of the aircraft broke up on contact and subsequently was destroyed by fire. The accident was not survivable.

This tragic incident provided an excellent exercise in the investigation of a mass disaster. It emphasized the necessity for removing bodies to some well-equipped centre such as the Institute of Forensic Pathology where storage facilities, equipment, ancillary aids and both technical and consultant assistance were readily available.

The Department of Civil Aviation, in the interests of safety, investigates each aircraft accident with meticulous care. The pathologist is an essential part of any investigating team when fatalities have occurred, to determine any possible human factors in the accident. Since 1960, 69 fatalities have been examined in great detail. Aviation pathology is of great value in detecting incapacity in the aircrew by disease or drugs, and in providing evidence of the accident sequence.

ATTENDANCES AT COURT

Specimens from medico-legal cases are submitted to the laboratory both by the police and government medical officers, not only from the metropolitan area but from all parts of the State. These specimens consist of clothing, swabs and other articles as well as post-mortem specimens and skeletal remains.

The number of cases is steadily increasing and this work is shared by the senior laboratory technical and medical staff. In other States most of these laboratory investigations are made at police laboratories where the staff is assigned to this task full-time. In Brisbane the work is done by technical staff and pathologists who have many other duties to perform. When such staff are away from the laboratory serious interruptions to the normal work occur.

During the past five months the staff of this laboratory have been called upon to attend various courts on 65 occasions, and of these 31 were in the country.

An approach has been made to the Justice Department acquainting them of the present serious situation and requesting that statements concerning laboratory investigations be accepted as a routine in the Supreme Court, when the evidence is purely formal. Many court appearances could be avoided if the Defence were advised of the laboratory findings before a case commenced and there appears to be no legal bar to this procedure.

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TABLE CX

2. STATISTICAL SUMMARY, 1966-67

1. BACTERIOLOGY

A. Specimens of Human Origin (Non-Tuberculous)

Specimen	Examination			Totals
	Culture	Microscopy	Antibiotic Sensitivity	
Swabs—				
Throat and Nose	338	59	32	429
Urethra, Cervix, Anus, Bartholin's Glands	2,000	3,365	28	5,393
Ear	35	9	24	68
Eye	10	3	6	19
Other	209	66	91	366
Pus	139	21	97	257
Pleural Fluid	11	6	2	19
Cerebrospinal Fluid	58	76	2	136
Serous Exudate	..	699	..	699
Sputum	459	455	119	1,033
Blood	2	1	4	7
Urine	4,410	5,377	922	10,709
Faeces	26	13	1	40
Miscellaneous	48	2	2	52
Total 1966–67	7,665	9,940	1,330	19,227
Total 1965–66				20,855

TABLE CX

Tuberculosis Section

Specimen	Examination			Totals
	Culture	Microscopy	Animal Inoculation	
Sputum	15,254	15,254	177	30,685
Sputum (Medi–Haler)	2,850	2,850	25	5,725
Gastric Aspiration	274	..	100	374
Urine	525	..	260	785
Pus	36	36	57	129
Pleural Fluid	79	79	89	247
Cerebrospinal Fluid	23	23	23	69
Miscellaneous Fluid	17	17	20	54
Bronchial Washing	14	14	6	34
Lung Tissue	14	14	20	48
Cultures	26	..	79	105
Tissue	24	22	58	104
Bone Marrows	11	11	21	43
Miscellaneous	73	74	104	251
Totals	19,220	18,394	1,039	38,653
Asbestos Bodies				13
Culture				
Identification				76
Identification (atypical strains)				242
Sensitivity test (Streptomycin, P.A.S., I.N.A.H.)				321
Sensitivity test (Viomycin, Pyrazinamide, Cycloserine and Ethionamid)				241
Total 1966–67				39,546
Total 1965–66				20,855

Mycology

Specimen	Examination			Totals
	Culture	Microscopy	Antibiotic Sensitivity	
Skin	60	5	1	66
Nail	16	12	1	29
Sputum	66	58	4	128
Miscellaneous	51	41	1	93
Total 1966–67	193	116	7	316
Total 1965–66	..	..	..	158

TABLE CX—*continued*

B. Foods and Waters

Specimen	Examination			Totals
	Culture	Plate Count	Reductase	
Water	2,241	2,226	..	4,467
Milk	978	980	949	2,907
Cream	66	66	66	198
Other Milk Products	14	6	..	20
Meats and Fish	195	159	..	354
Miscellaneous	206	44	..	250
Total 1966–67	3,700	3,481	1,015	8,196
Total 1965–66				6,481

C. Various Materials

Specimen	Object of Examination	Number
Disinfectants and Antiseptics	Rideal-Walker Co-efficient	22
Bottles	Sterility	143
Miscellaneous	Sterility	3
	Culture	23
	Total 1966–67	191
	Total 1965–66	387

2. PHAGE TYPING

—	Number
Cultures Prepared	1,354
Coagulase Tests	761
Antibiotic Sensitivity Tests	1,295
Cultures Phage Typed at R.T.D.	1,878
Cultures Phage Typed at 1,000 X R.T.D.	583
Total 1966–67	5,871
Total 1965–66	13,142

3. SEROLOGY

—	Number
Serum Agglutination (Screen)—	
Salmonella typhosa (O)	125
Salmonella typhosa (H)	4,907
Salmonella paratyphi (H)	4,907
Salmonella schottmulleri	4,907
Proteus OX19	4,907
Proteus OXK	4,907
Brucella abortus	4,907
Leptospira—	
Serotype icterohaemorrhagiae	6,802
Serotype canicola	6,802
Serotype broomi	5,162
Serotype zanoni	6,802
Serotype robinsoni	5,162
Serotype australis	6,802
Serotype bratislava	5,162
Serotype pomona	6,802
Serotype grippotyphosa	6,802
Serotype medanensis	6,859
Serotype kremastos	6,802
Serotype swajizak	5,162
Serotype lyos	6,802
Serotype celledoni	6,802
Serotype autumnalis	6,802
Serotype javanica	1,715
Serotype ballum	1,715
Serotype cynopteri	1,715
Serotype bataviae	1,715
Serotype hebdomadis	57
Serotype pemeles	57
Serotype mini	57
Serotype hardjo	57
Serotype wolffi	57
Serotype sejroe	57
Serotype saxkoebing	57
Serotype maru	57
Streptococcus MG	10
Cold Agglutinins	1,781

3. SEROLOGY—*continued*

—	Number
Serum Agglutination Tests (Quantitative)	2,748
Paul Bunnell Tests	4,956
Leptospiral Strains typed (8)—	
Agglutination Tests Performed in Typing	1,330
Absorption Tests Performed in Typing	150
Antisera prepared	36
Complement Fixation Tests—	
Q. Fever—*Coxiella burneti* (Phase I)—	
Routine	29
Quantitative	17
Q. Fever—*Coxiella burneti* (Phase II)—	
Routine	6,649
Quantitative	776
Complement Fixation Tests—	
Typhus Fever (Murine)—*Rickettsial mooseri* (Soluble)—	
Routine	15
Quantitative	3
O.L.G.V. Virus Group—*Miyagawanella ovis*—	
Routine	4,470
Quantitative	307
Primary Atypical Pneumonia—*Mycoplasma pneumoniae*—	
Routine	3,721
Quantitative	627
Kolmer Wassermann (Serum)—	
Routine	17,198
Quantitative	580
Reiter Protein—	
Routine	3,482
Quantitative	81
Kolmer Wassermann (C.S.F.)	340
Reiter Protein (C.S.F.)	20
V.D.R.L.	19,965
Total, 1966–67	201,701
Total, 1965–66	173,708

TABLE CX—*continued*

4. Biochemistry

Specimen	Examined For	Number
Whole Blood ..	Urea	2,707
	Glucose	262
	Uric Acid	1,242
	Pigments	14
	Bromide	2
	Cholinesterase	79
	CO_2 combining power ..	73
Serum	Protein	2,521
	Cholesterol	734
	Bilirubin	1,272
	Chloride	230
	Calcium	307
	Inorganic phosphate	200
	Acid phosphatase	134
	Alkaline phosphatase ..	1,192
	Thymol turbidity	1,093
	Thymol flocculation	1,089
	Zinc sulphate turbidity ..	1,092
	Paper electrophoresis ..	1,619
	Amylase	42
	Sodium	254
	Potassium	247
	Serum glutamic oxalacetic transaminase	592
	Serum glutamic pyruvic transaminase	492
	C. reactive protein	73
	Fibrinogen	1
	Carotene	2
	Copper Oxidase	2
	Ceruloplasmin	2
	Specific Gravity	2
Cerebrospinal Fluid	Protein	76
	Globulin	32
	Chloride	54
	Glucose	53
	Colloidal Gold Reaction ..	637
Pleural Fluid ..	Protein	1
	Specific Gravity	1
Ascitic Fluid ..	Protein	1
	Sugar	1
	Chloride	1
Plasma	Protein	1
	Ascorbic Acid	2
Urine	Albumin	5,379
	Sugar	5,394
	Bilirubin	8
	Urobilin	6
	Urobilinogen	7
	Diastase	16
	Calcium	27
	Coproporphyrins	1
	Porphyrins	11
	Phosphate	2
	Uric Acid	2
	Protein	20
	Sodium	1
	Specific Gravity	3
	Isoniazid	61
	Porphobilinogen	1
	Cycloserine	4
	Pyrazinamide	3
Faeces	Total, Split and Unsplit Fats	89
	Occult blood	53
Renal Calculi ..	Chemical constitution ..	39
Functional Tests ..	Glucose tolerance tests ..	293
	Urea clearance tests	32
	Urea concentration tests ..	32
	Fractional test meals ..	15
	Total, 1966–67 ..	29,930
	Total, 1965–66 ..	27,281

5. Haematology

—	Number
Cell Counts—	
Red cells (Total)	102
Red Cells (Stippled)	58
Reticulocytes	58
White Cells (Total)	4,906
White Cells (Differential)	5,558
Platelet count	241
Eosinophile count	18
Haemoglobin	12,017
Haematocrit	7,635
Sedimentation Rate	1,059
Coagulation Time	66
Bleeding Time	66
Prothrombin Time	318
Red Cell Fragility	5
L.E. Cells	35
Latex Slide Test (R.A.)	328
Blood Grouping (A.B.O.)	4,399
Blood Grouping (Rh)	4,399
Rh Antibodies	1,299
Coombs Test	32
Marrow Smears	66
Examination of Smears	9,905
Total, 1966–67	52,570
Total, 1965–66	47,537

6. Parasitology

Specimen	Object of Examination	Number
Faeces	Amoebae (Cysts and Vegetative)	5,881
	Helminth ova ..	5,881
Soil	Amoebae (Cysts and Vegetative)	19
	Helminth ova	19
Pus	*Trichomonas vaginalis* ..	248
Blood	*Plasmodium* sps.	27
Helminth	Identification	5
	Total, 1966–67 ..	12,080
	Total, 1965–66 ..	7,252

7. Various Tests

—	Number
Slide Test (Pregnancy)	1,955
Slide Test (Pregnancy) (Quantitative)	8
Sweat Test	2
Casoni Test	4
Seminal Fluid Assessment	16
Total, 1966–67	1,985
Total, 1965–66	1,911

8. Histology

Tissue Sections Prepared	Number
Human—	
Biopsy (specimens received 8,690)	11,364
Medico-Legal Tissues	463
Animal Tissues	15
Total 1966–67	11,842
Total 1965–66	11,538

9. Exfoliative Cytology

Specimen	Number
Sputum	794
Bronchial or Tracheal Washing	10
Pleural Fluid	40
Miscellaneous	37
Total July, 1966–D.c. 1966	881
Total, 1965–66	2,512

TABLE CX—*continued*

10. MEDICO-LEGAL

Specimen	Object of Examination	Number
Clothing and Various Articles	Blood	298
	Spermatozoa	282
Vaginal Smears	Spermatozoa	127
Tissue	Histopathology	463
Blood	Grouping	101
Bloodstains and Scrapings	Presence of Blood ..	35
	Determination of Blood Group	22
Hair	Identification	28
Skeleton	Identification	4
	Total 1966–67 ..	1,360
	Total 1965–66 ..	1,368

11. POST MORTEM

—		Number
Post-mortem Examinations ..	Total, 1966–67	1,043
	Total, 1965–66	1,010

12. INSTITUTE OF FORENSIC PATHOLOGY

Specimen	Examination	Number
	HISTOLOGY	
Tissue	Post Mortem	3,580
	Frozen sections	102
	Special stains	148
	Total, 1966–67 ..	3,830
	Total, 1965–66 ..	4,487
	BIOCHEMISTRY	
Whole Blood ..	Barbiturate	55
	Glucose	3
Serum	Protein	6
	Chloride	6
Urine	Barbiturate	45
	Sugar	3
	Acetone	3
	Acetoacetic Acid	3
Pleural Fluid ..	Barbiturates	1
	Total, 1966–67 ..	125
	Total, 1965–66 ..	131
	BACTERIOLOGY	
Swabs—		
Brain	Culture	6
Ears	Culture	20
Bowel	Culture	29
Respiratory System ..	Culture	73
Urino-genital System ..	Culture	4
Blood	Culture	21
Faeces	Culture	2
Faeces	Parasites	1
Tissues (Various) ..	Diatoms	2
	Total, 1966–67 ..	158
	Total, 1965–66 ..	150

RADIOGRAPHY

Radiographs	112

13. MATERIAL SUPPLIED.

To hospitals, private practitioners and local authorities

Diagnostic kits for tuberculosis	2,076
Diagnostic kits for bacteriology	13,266
Diagnostic kits for haematology and serology	12,944
Diagnostic kits for biochemistry	1,460
Diagnostic kits for virology	480

To Dr. Hayes, Government Medical Officer

Metropolitan Police Stations—	
Blood Sugar Bottles	360
Urine Bottles	360
Southport Police Station—	
Blood Sugar Bottles	24
Urine Bottles	24
Ipswich Police Station—	
Blood Sugar Bottles	24
Urine Bottles	24
Total, 1966–67	30,970
Total, 1965–66	20,590

14. MEDIA

Slopes	102,853
Plates	60,964
Tubes and bottles	165,384
Total 1966–67	329,201
Total 1965–66	343,834
Chemical Solutions	2,917 litres
Stains	235 litres
Total 1966–67	3,152 litres
Total 1965–66	1,832 litres

15. ANIMAL BREEDING STATION

Animals Provided—	
Guinea-pigs	953
Rabbits	109
Mice—Litters*	115
Animal Bleeding—	
Rabbit (40 ml.)	1,311
Guinea-pig (8 ml.)	330
Sheep (400 ml.)	41
Stock on hand (1st July, 1967)—	
Guinea-pigs	340
Rabbits	140
Mice	1,630
Sheep	4

* An additional 2,800 litters were bred at the George Street Animal House during the year, or obtained from other sources.

QUEENSLAND GOVERNMENT CHEMICAL LABORATORY

Director, Government Analyst and Chief Inspector of Explosives: I. L. B. Henderson, B.Sc., F.R.A.C.I.
Deputy Director and Inspector of Explosives: D. Mathers, M.Sc., A.R.A.C.I.

Chief Chemists:

H. G. Dunstan, B.Sc., A.R.A.C.I.
K. H. Deasy, B.Sc. (Hons.), A.R.A.C.I.
J. V. Foreman, B.Sc., A.R.A.C.I.
J. C. Yule, B.Sc., A.R.A.C.I.
W. N. Carvosso, Dip. Ind. Chem., A.R.A.C.I.
R. S. Potter, A.R.A.C.I. (retired 31-12-66)

The Government Chemical Laboratory provides a chemical, analytical and advisory service for State Government Departments. It also provides a complete service in Queensland for the Commonwealth Government Departments of Customs and Excise and of Primary Industry, and carries out work for other Commonwealth Departments, including the Defence Forces, and for the Territory of Papua and New Guinea. Payment is received for the services rendered to the Commonwealth.

The number of samples examined during the twelve month period was 32,884 and the table below (Table CXI) shows the sources and the numbers of samples submitted:—

TABLE CXI

Showing Sources and Numbers of Samples

Source	Number
State Departments—	
Health	7,424
Health (explosives)	2,290
Police	318
Coroner	1,095
Government Medical Officer	442
Micro-Biology and Pathology	766
Industrial Medicine	171
Mines	46
Geological Survey	2,504
Coal Board	878
Harbours and Marine	312
Irrigation and Water Supply	3,271
Local Government	795
Railways	68
State Stores	582
Works	1,470
Housing Commission	4,982
Others	471
Commonwealth Departments—	
Primary Industry	3,050
Customs and Excise	912
Others	61
Hospital Boards	644
Medical Profession	159
Public	173
	32,884

Certificates were issued for all of these samples. The variety of work requested by these Departments calls for wide knowledge and skills on the part of the Laboratory staff and the provision of much specialised equipment.

The staff position has shown no improvement. Several graduates and cadets were appointed in January but this gain was more than offset by the retirement of one senior officer and the resignation of several others, either to enter private industry or to further their studies overseas. Little hope can be held for replacements until the end of the year. In the course of their duties a number of the staff are required to attend and give evidence at Courts of Law in numerous Queensland cities and towns. This involves considerable loss in laboratory working time of experienced officers and aggravates the staff position. In 1966-67 the total number of Court attendances was seventy-three (73), of which thirty-eight (38) were outside the Brisbane metropolitan area, some extending as far as Cairns and Cloncurry and taking up considerable travelling time. The Laboratory at present has two Fellowship students at the University of Queensland, and one at the Queensland Institute of Technology who is expected to complete his course this year.

Preparatory work in the construction of the proposed Riverside Driveway has made necessary the demolition of the building housing the ore-crushing plant and two small laboratories, and the machinery and equipment is now being transferred to the building at the rear of the Womens' Clinic. The greater part of the analytical work for the Commonwealth Department of Primary Industry has been transferred to the Alice Street laboratory giving increased working space to the Customs and Excise section.

During the twelve-month period the Director attended a Sydney meeting of the Australian Port Authorities Dangerous Goods Committee and a Melbourne meeting of the Australian Dangerous Goods Transport Committee. In July, 1966, the annual meeting of the Food Analysts' Sub-committee of the National Health and Medical Research Council was held in Brisbane and was attended by the Chief Chemist of the Food and Drugs section of the Laboratory, who is a permanent member of the Sub-committee, and by the Senior Chemist as an observer. Subsequently, as agreed to by Commonwealth and States, Bulletin No. 2 of the Food Analysts' Sub-committee was drawn up by the Chief Chemist and published by Queensland, as host State.

A chemist also attended a Working Party on Pesticide Residue Analysis in Melbourne arranged by the Assistant Comptroller-General (Lab.) of Customs to discuss problems associated with the determination of pesticide residues in Australian export foodstuffs.

New equipment added during the year included a Beckman IR-102 Rapid Scan Spectrophotometer, a Martindale Abrasion Tester for textiles, an electric calculating machine and a new lathe for the workshop.

The four Government bulk storage explosives magazines have operated satisfactorily during the twelve months. Installation of electric staff signalling apparatus, made necessary by heavy increase in traffic, is proceeding at the Bajool magazine siding. All explosives entering the State have been sampled and tested for stability as required by the Act and certified as being safe for storage, transport and use, and the necessary licenses have been issued under the Regulations. A report on the administration of *"The Explosives Acts,* 1952 *to* 1963," is appended.

Sectional reports which follow show in some detail the work of the Laboratory:—

SECTION 1

FOODS, DRUGS AND WATERS

Table CXII gives the source and number of the samples examined.

TABLE CXII

Department	Number of Samples
Health	7,424
Irrigation and Water Supply	3,271
Other Government Departments	710
Local Government	795
Public	133
Total	12,333

TABLE CXIII

Summary of samples of foods, drugs and articles examined for the Department of Health.

Nature of Sample	Number of Samples
Beverage or cordial	673
Bread	528
Cereal	98
Confectionery	51
Edible oil or fat	82
Fish	51
Honey	24
Meat	388
Meat pie	229
Milk—official	2,823
Milk—unofficial	49
Milk product	102
Miscellaneous food product	184
Spirituous liquor	29
Cleanser, Disinfectant	37
Cosmetic	30
Drug, medicine	265
Paint, paint scraping	125
Pencil	43
Tobacco	360
Toy	113
Miscellaneous	291
Total	6,575

Miscellaneous samples include food colours, essences, eggs, salt, sugar, soups, insecticides, plastic bags, food appliances, timber, water filters.

TABLE CXIV

Legal samples taken by Inspectors in accordance with the provisions of *"The Health Acts,* 1937 *to* 1967."

Nature of Sample	Number Examined	Passed	Failed
Milk	2,823	2,720	103
Minced meat	230	170	60
Sausage	107	68	39
Paint	55	55	0
Paint scraping	49	13	36
Toy	26	1	25
Bread	11	8	3
Spirituous liquor	3	0	3
Butter	2	2	0
Miscellaneous	3	0	3
Totals	3,309	3,037	272

MILK

Examination of 2,823 legal samples of milk showed 96·4 per cent. satisfactory. Included in the 103 failures were 9 watered milks, 73 deficient in milk-fat and 21 deficient in non-fat milk solids. Good seasons in most areas produced the notably low figure (21) of naturally poor milks.

While the average fat content for all samples was pleasing (3·99 per cent.), it is regrettable that 73 samples were below standard. There is no doubt that many of these are the result of neglect by the vendor to agitate stored milk each time some is to be withdrawn.

Only 9 samples were found to contain added water and these were taken at Charters Towers (2), Clermont (1), Ipswich (1), Mt. Isa (1), Murgon (1), Roma (1) and Southport (2).

One-pint cartons of pasteurised homogenised milk were marketed this year and appear satisfactory.

A sample of U.H.T. (Ultra Heat Treated) Milk was submitted for test purposes. Such milk in hermetically sealed containers can be safely kept for long periods.

Flavoured milks (26), yoghurt (8) and flavoured milk powder (3) conformed with requirements.

A large quantity of milk was rejected by a milk company because of a taint and samples were found to contain 0·25 part per million of phenolic compounds.

MEAT

Analysis of meat and meat products (617) constituted a large part of the work of the section.

Official minced meats (230) were tested for adulteration with sulphur dioxide and 60 samples were found to contain this preservative.

Insufficient meat was present in 15 of the 107 legal sausage samples and excessive proportions of sulphur dioxide were used in 27.

Unofficial samples included three frozen chickens investigated for traces of the refrigerant compound, propylene glycol and also a can of pork shoulder in which excess potassium nitrate was present.

Meat pies (229) were analysed for meat content and were generally satisfactory in content of lean meat. In view of the low meat-fat figures found in pies sold here the lean meat content appears to be the important consideration.

CEREAL PRODUCTS

The various types of flours and meal mixtures from the flour mills were examined to ensure satisfactory materials are provided for baking our bread. As usual little fault was evident and, of 83 samples, only 1 was below standard and here the deficiency was small.

With average protein content of 12·3 per cent. bakers' white flour was capable of producing good quality bread.

Packaged wheat germ was sound but not labelled correctly in the form in which vitamin content was claimed.

Mixed cereals and wheat germ was a good product but failed to declare the proportions of the cereals present.

A complaint sample of cold prepared porridge had red spots on its surface, due to a red-pigment forming bacteria.

BREAD

Again this year great zeal was shown in bread sampling and 528 samples were submitted.

In respect of composition, 42 loaves failed to satisfy the standards for the following reasons:—

Seventeen brown or wholemeal loaves were deficient in wholemeal, 14 milk loaves were too low in milk solids, 9 fruit loaves contained insufficient fruit and 2 protein-enriched loaves failed in protein content.

The failure of so many milk breads is displeasing and careful attention will be given to this type of bread through the coming year. Artificial colour was found in a number of fruit loaves but no provision for artificial colour is made in the standard. Generally, with 486 samples conforming, compliance with standards of composition is reasonable. The majority of the loaves were of fair or good quality and only 11 loaves were judged below standard or poor. The faults included small volume, underbaking, burnt crust, uneven crumb and thick dense crust. The dry solids content was determined in 23 sample loaves submitted by the Weights and Measures Department.

EDIBLE OILS AND FATS

Examination was made of butters (34), margarines (8) and vegetable oils (40).

Butters produced at 25 butter factories were found to be sound and free from extraneous matter. Apart from slightly high water content in three samples, conformity with prescribed composition was good.

Margarine samples were of the required standard and the claims were correct.

Modern methods using gas chromatography of the methyl esters of fatty acids provided more definite information in the analysis of vegetable oils than could be obtained previously. Two samples marked "maize oil" were found to be cottonseed oil and soya-bean oil respectively. Of three samples marked "peanut oil", two were safflower oil, and one a blended oil containing safflower oil. One sample marked "blended oil" was found to be almost entirely rape oil. These were not official samples.

BEVERAGES

A survey of tea yielded 28 samples and these conformed with the prescribed standard and were free from adulteration.

Soft drinks and cordials (636 samples) presented few causes for criticism.

Deficiency of fruit juice was observed in 9 samples of fruit drinks; quinine content was low in 2 tonic drinks and a small proportion of saccharin was added to soft drinks by one manufacturer despite the presence of adequate sugar. Preservative was used at slightly excessive rates in some samples but no flagrant breaches were reported.

OTHER FOODS

Creams (32) conformed with the prescribed standard.

A survey of honeys (24) was made and all samples were satisfactory. Average figures were (per cent.):—water 16·1, reducing sugars 74·3, (dextrous 36·0, laevulose 38·3), sucrose 1·5, dextrin 0·9, ash 0·3.

Prawns (30 samples) were tested for soundness and 13 were rejected. The ammonia content was found to correlate well with other criteria in assessing spoilage.

Imported fish (hake) was deteriorated and also contained artificial colours not permitted in fish.

Imported figs were condemned on account of infestation with "sugar mites" .

Ice creams (33 samples including 24 half-gallon cans) and milk ices (6 samples) were good quality products. Small deficiency of milk-fat occurred in four brands and small deficiency of total food solids per gallon in three others. The nature of the fat was confirmed as milk-fat by gas chromatography.

Canned fruits and fruit juices (21) were good except for one can of crushed pineapple which contained pineapple core.

Of the 22 jams submitted 2 were low in fruits—strawberry conserve and home-made rosella.

Confectionery (51 samples) was free from fault except for the presence of too much artificial colour in three samples of liquorice.

Food colourings (14) were checked for identity of the dyes present. Colouring submitted by one manufacturer contained Rhodamine B, a dye not permitted to be used in food and approval to sell this colouring was denied.

Spirituous liquors are tested by inspectors and only suspect samples are submitted to the Analyst. The legal samples (3) confirmed the inspector's tests and excess water was found. Mixtures of spirits and soft drinks (11) were found to conform with the declarations in the labels.

Insecticidal residues were well within the limits of tolerance on the 17 samples of fruit tested.

DRUGS AND MEDICINES

A large number of proprietary medicines were examined during the year. No harmful or restricted drug was found in these preparations. The claims of most were found to be reasonable but in four cases were considered extravagant.

Included in the surveys were:—

Formulations for coughs or colds (8),
Pills, essentially laxative or diuretic (15),
Nerve tonics (6),
Ointments (9),
Slimming preparations (3),
Teething powders (2),
Cascara (5).

Drugs (19) from the Royal Brisbane Hospital were found to comply with the requirements of The British Pharmacopoeia or other appropriate authority.

Identification of unknown capsules and tablets was accomplished.

Accuracy of dispensing was checked on 7 mixtures.

Sodium fluoride (8) intended for use in drinking water was tested for purity.

Deteriorated drugs were safely destroyed.

COSMETICS

These included talcum powders (7), depilatories (3), hair dyes (2), hair-dressings (2), soaps (2), hair spray (1), toothpaste (1) and nail hardener (1).

The hair-dressing preparations were found to contain lead in contravention of the Health Acts.

Otherwise the samples occasioned no adverse criticism.

MISCELLANEOUS

Toy samples totalled 113 and many of the samples failed because of the use of high-lead paints on the backs of small mirrors.

While all new paints (55) were free from lead the scrapings from paints applied long ago showed that a hazard exists in old paintwork.

Metal containers or appliances (22) for use with foods or drinks were examined for suitability. Some had recesses difficult to clean and the plating of some, cadmium and zinc, was not approved. In particular it is stressed that cadmium is highly poisonous and must not be allowed to contact foods.

Detergents (22), disinfectants (9), pesticides (5) and toilet bowl deodorants (4) were analysed.

Tobacco and cigarettes (360) were examined for H.M. Customs.

The proportion of dieldrin (anti-borer treatment) in 8 samples of veneer was obtained for the Forestry Department.

Dead fresh-water fish examined for the Department of Local Government were found to contain chromium (1·7 p.p.m.).

WATERS SUB-SECTION

5,671 samples of water, sewage and industrial waste were examined during the year. These samples were submitted by Government Departments, both Commonwealth and State and also by the public, as shown in the following table:—

TABLE CXV

Source	Number of Samples
Department of Health	849
Irrigation and Water Supply Commission	3,271
Department of Local Government	795
Geological Survey Office	160
Department of Harbours and Marine	312
Miscellaneous Government Departments—	
Commonwealth	39
State	122
Public	123
Total	5,671

This was a considerable increase on the number of samples handled during the previous year. The greatest increase was in samples submitted by the Irrigation and Water Supply Commission. The Commission's activities in the search for suitable supplies of water for various purposes and in checking the quality of existing supplies are not likely to lessen in the near future.

The Department of Local Government forwarded more samples of industrial, mining and trade wastes this year than ever before, and the analyses of some of these were considerably more time consuming than those of any other samples.

Fewer samples were received from the Department of Health, but this was mainly due to the completion of a survey of Moreton Bay near the mouth of the Brisbane River and of the river itself to check whether pollution by sewage effluent was taking place.

As an indication of the "flushing out" effect of the recent heavy June rainfall on the Brisbane River, a sample collected from the bottom of the river in the Hamilton Reach on the 28th June had a Total Dissolved Solids content of 105 parts per million, a Chloride content of 30 parts per million and a Hardness (as Calcium Carbonate) of 50 parts per million. Corresponding normal figures for a sample taken at the same spot would be 30,000, 16,000 and 5,000 parts per million respectively.

SECTION 2

TOXICOLOGY AND BIOCHEMISTRY

TOXICOLOGY

Of the 1,218 specimens examined, 1,040 were in connection with 259 post-mortem examinations. The majority of these were at the request of Coroners throughout Queensland.

Poisons and drugs in quantities which could have a significant bearing on the cause of death were found in specimens from 181 of these post-mortem examinations.

Barbiturates were again most commonly found (135 cases) and included pentobarbitone (57 cases), "carbrital" (23), amylobarbitone (8), "tuinal" (6), quinalbarbitone (5), barbitone (5), butobarbitone (3), butabarbitone (2) and in 26 cases mixtures of barbiturates were present. Other drugs and poisons found were ethyl alcohol (12 cases), chloral (6), strychnine (5), arsenic (5), mercury (2), dieldrin (2), chloroquine (2), glutethimide (2), salicylates (2), azinphos-ethyl (1), lysol (1), detergent (1), iron tablets (1), carbon monoxide (1), purgative mixture (1), nortriptyline (1), bromide (1), amitriptyline (1), Q.E.S. (1) and phenothiazine (1).

The remaining 75 examinations did not reveal any poison but were considered necessary to exclude this as a possible cause of death. In 22 of these cases, however, drugs in therapeutic quantities were found.

Other specimens (178) examined included horse and dog viscera, crocodile skins for the presence of fluoride, sugar for the presence of cyanide, brake fluid, petrol, paint thinners, dregs in a drinking glass, prawns and wheel trims.

Several specimens of breath were successfully examined for the presence of volatile organic solvents including ether, chloroform and carbon tetrachloride.

An increased number of drugs, tablets, medicines and abortifacients were submitted for identification.

Margarine, hair cream, acid and soil stains were identified on clothing.

Samples of fire debris and inflammable fluids were submitted from several sites of fires which were investigated for the possibility of arson.

The Administration of the Territory of Papua and New Guinea submitted several specimens mainly in connection with post mortem examinations.

Members of this section were required to attend the various Courts throughout the State on 72 occasions.

BIOCHEMISTRY

Biochemical specimens were examined from the Laboratory of Microbiology and Pathology, Government Medical Officers, Police Department, Director of Industrial Medicine, Hospitals and Medical Practitioners. The nature, significance and number of such specimens are shown in Table CXVI:—

TABLE CXVI

Nature of Specimen and Significance	Number of Specimens
Blood and Urine for Alcohol (taken in connection with Traffic Offences)	613
Blood and Urine for Alcohol and or Drugs (chiefly Post-mortem specimens)	986
Blood for Carbon Monoxide	38
Urine for Amphetamines	20
Urine, Blood and Bone for Lead	696
Hair, Nails and Urine for Arsenic, Antimony, Mercury and Thallium	64
Miscellaneous	32
	2,449

SECTION 3

MINING AND SECONDARY INDUSTRIES

TABLE CXVII

Department	Number of Samples
Mines Department	46
Geological Survey Office—	
Coal	605
Gold and Silver	1,457
Gold and Silver plus other elements	124
Gas	34
Oil	9
Clay	8
Miscellaneous	107
Coal Board	878
Industrial Hygiene	80
Miscellaneous Government (State)	123
Miscellaneous Government (Commonwealth)	8
Public	33
Total	3,512

Table CXVII shows the sources of work carried out by this Section and emphasises the wide variety of information requested by the various Government Departments.

Consideration of the table limited to the totals alone would miss the fact that each of these items involves many separate calculations for assessment before the final report is made. Plainly the layout of the section, whilst it may have been satisfactory in the past, is not geared for producing results rapidly to be of greatest assistance to an accelerated Geological Survey programme. Complaint is made by that office that the information takes so long to reach it. Most of the delay has been caused by inability to crush and prepare samples for analysis at a rate comparable to that which the geologist can log his drilling cores. Action is being taken to remedy this matter and the analytical work will then be able to keep in step. In the meantime, there has been an accumulation of untouched samples which will take some time to analyse.

Coal analyses have been particularly affected and because of the effect on some properties of coal, the tendency has been to give this part priority to the disadvantage of the geochemical section. On the other hand, the amount of work performed on geochemical samples requires less time analytically than coal so that when additional preparation and crushing facilities become available the backlag will soon be overcome and some assurance of being able to meet submission requirements can be given.

Further, due to illness, it has been necessary to engage cadets in preparation work. This places a greater strain on senior personnel whose interest lies in being able to keep faith with the Government Departments who submit samples.

From the Geological Survey Office other samples submitted cover a wide range of elements for determination, including copper, lead, manganese, tin, gold and silver.

The Queensland Coal Board, by way of analysis, keeps check on the quality of coal supplied from the mines. This has led to an increase in the variety of determinations carried out for the Board, especially involving ultimate analyses, ash fusions, and ash analyses. Some priority is accorded the Coal Board since it is dealing with the day to day requirements of the consumers.

OIL AND GAS

Gas analyses and allied investigations for the Department of Mines included the routine examination of natural gases and coal mine seam gases.

Smoke tubes used for the investigation of ventilation problems in mines were submitted for approval. These tubes contain stannic chloride absorbed on pumice and emit copious fumes of very fine stannic hydroxide when moist air is pumped through them. A small amount of hydrochloric acid vapour is simultaneously produced, but consideration of the quantities involved showed that their use invoked no health hazard.

Examinations were made of self-contained breathing apparatus equipment for the Mines Rescue Station at Collinsville and advice given on its maintenance.

Detailed examination of faulty detonators from a coal mine in the Ipswich area showed the effects of both manufacturing faults and incorrect firing procedures.

Maintenance of optical methanometers for the Coal Mines Inspectorate and the Mines Rescue Station was carried out by this section as no other organisation prepared to do this work exists in Queensland.

As the result of an explosion in a Brisbane shipyard in which a man lost his life, analyses of paint solvents in use in the yard were made and clearly indicated the source of the gases which exploded. Evidence on this matter was given at the subsequent coronial inquiry.

In conjunction with the Director of Industrial Medicine an investigation was carried out at Wacol Prison Farm of the gases produced in a silo in which a prisoner had collapsed and died. Silage produces large quantities of carbon dioxide in a very short time, and this accident emphasises the necessity for adequately ventilating these and other similar installations before men are allowed to enter them.

Analysis of the non-condensable gases causing operating difficulties in the refrigeration plant of the Brisbane Abattoir were made to assist the plant engineer to pin-point the source of these difficulties.

INDUSTRIAL HYGIENE

As required by the Director of Industrial Medicine, visits are made to factories and analytical work is carried out in the laboratory. During the past year, a visit to a foundry revealed the presence of high concentrations of carbon monoxide due to lack of adequate ventilation. At a factory which uses large quantities of asbestos, it was found that better handling procedures would reduce the risks associated with this industry. At one plant, siliceous dust was a problem whilst at another, lead compounds were being somewhat carelessly handled.

Some time was spent in Townsville, carrying out tests on the general climatic conditions in a copper refinery there.

In addition to these plant visits, various materials have been examined so that safe working conditions can be set in atmospheres in which they are used. Such materials include solvents commonly used in the paint industry.

OTHER DEPARTMENTS

Samples of river water containing coal tar and its derivatives have been submitted by the Harbours and Marine to determine the source of river pollution.

One interesting sample from the Works Department was some bitumen from a school ground. The surface of a playground around a palm tree showed bulbous swellings and failure of the bitumen surface. This resulted from palm nuts falling and lying on the bitumen surface. Subsequently heat from the sun liberated oil which softened and deformed the bitumen.

This section has assisted the Golden Casket Office throughout the year by having an officer present during regular inspections of the discs used in the drawing machines. In addition tests are carried out on the discs both new and old, in the laboratory.

The Works Department and the Co-ordinator General's Department have sent samples seeking causes of corrosion and advice to safeguard against further trouble of this nature.

On staffing within the Section, it may be said that the position is not really satisfactory. On the preparation side, it has not been possible to obtain all the staff required. Within the laboratory, the position is that there is no trained chemist who can work with senior staff with a minimum of supervision. To acquire the skills required in the specialisation of this section takes many years of involvement. Very often the basic training within the University is inadequate as a foundation to extend chemical expertise into the field of applied chemistry required in the study of rock analysis, industrial hygiene, problems of corrosion and of secondary industries.

SECTION 4

Commonwealth Departments, Public Works, Housing Commission, State Stores, &c.

Details of the samples received are set out below:—

TABLE CXVIII

Commonwealth Department of Primary Industry ..	3,050
Commonwealth Department of Customs and Excise ..	912
Queensland Housing Commission	4,982
Public Works Department	1,470
State Stores Board	582
Queensland Government Railways	68
Other Departments	18
	11,082

In regard to work for the Customs Department, the current year has seen a continuation of the trend already in evidence in former years, towards analyses of a more complex nature and away from the traditional routine examinations for such requirements as proof spirit and other matters related to alcohol content. Most samples are now of the kind requiring an individual approach to each product and consequently increased time for each. The adoption of a completely revised Customs Tariff in the chemical and chemical products sections in October, 1966, has been the cause of much of this additional work as more detailed reports are now required. This tariff was adopted following the Tariff Board's comprehensive investigation and report on the chemical industry and imports in Australia.

In addition to the samples actually examined in the laboratory, much time is now devoted to providing written technical advice to the Customs Department on products described in chemical terms, so that the department may classify these goods. This advice requires the application of chemical knowledge to the Tariff with the interpretative assistance of the Explanatory Notes to the Brussels Nomenclature, now used for Australian Tariff classification. It is usually given for "Pre-entry" purposes to enable classification to be effected before the goods arrive in port.

The number of beef fat samples for the Commonwealth Department of Primary Industry has now been stabilised at a constant weekly intake with the method on a routine basis.

The majority of samples received from the State Stores Board were textiles and included blankets, sheeting, mosquito netting, canvas, towelling, wool-polyester material for police uniforms, &c. The annual cost of textiles to the State is considerable and constant testing of tender and delivery samples is necessary to get the best value for money.

During the year a Martindale Wear Testing Machine was obtained and preliminary tests have indicated that this will be a valuable asset to add to other modern apparatus we already have for textile testing.

Shrinkage of fabrics is of considerable importance and this has received some attention during the year. A modern method for sterilising blankets involves boiling under controlled conditions. Shrinkage occurs during the first boiling but is only slight after this.

The new specification for Police wool-polyester fabric, drawn up last year, has resulted in a product which has a better "feel" and has eliminated some manufacturing problems.

Other samples received from the State Stores Board included cleansers, ball point pens, foam rubber mattresses, thermometers, &c.

Over 6,500 samples of paint were submitted by the Queensland Housing Commission and Public Works Department. The usual high quality has been maintaned. This has been reflected in the low rate, less than five (5) per cent. of samples failing to conform to the specification. The failures were due, in most cases, to excessive proportions of volatile thinners or deficiency in zinc oxide content. There were no failures due to the presence of lead compounds.

The Railway Department submitted sixty-eight (68) samples of fabrics used for making uniforms. The majority of these conformed to the specification.

The Commonwealth Department of Primary Industry submitted a wide variety of foodstuffs intended for export. These included butter, margarine, icecream, frozen milk, frozen egg, powdered milk, casein, cheese, jam, canned fruit, &c.

Flour which is exported has to be accompanied by a certificate of quality. This service is undertaken for the various flour mills for which a fee is charged. All such samples were found to be of good quality and suitable for export.

Several samples were examined for the Police Department. These included ink and paint; the first in connection with a charge of assault; the second in connection with a charge of theft.

"THE EXPLOSIVES ACTS, 1952 TO 1963"

LEGISLATION

The following explosives were classified by Order in Council and authorised for use in Queensland:—

Imperial Chemical Industries of Aust. and N.Z. Ltd.—	
Class 6, Division 3 ..	Anodet Delay Detonators
Hercules Powder Company, Inc.—	
Class 3, Division 1 ..	Vibrogel 5 Reloader 11
International Firearms Company—	
Class 3, Division 2 ..	I.M.R. 4895
S. Hoffnung & Co. Ltd.—	
Class 7, Division 3 ..	Straitline Starting Pistol Caps

No amendments were made to Regulations.

IMPORTATION

A total number of 157,068 cases (approximately 3,925 tons) of commercial explosives was imported into Queensland during the twelve months ending 30th June, 1967. Of these, 97,245 cases were of Australian manufacture; the remainder came from the United States of America, the larger portion of this being "canned" explosive for seismic exploration purposes. The total importation was 625 tons less than in the previous year, this being attributed to a falling off in seismic work and the increased use of ammonium nitrate-fuel oil as an explosive.

Packaging of explosives has been generally good although one new type has shown appreciable leakage under Queensland conditions and has not proved satisfactory. Little water damage has occurred to fibreboard cases this year in spite of a record wet season. Port Alma remains as the only bulk explosives port for central and southern Queensland.

MAGAZINES

The four Government bulk explosives magazines have operated at somewhat less capacity this year and it has been possible to make some storage room available to the Department of the Army at Queerah and Brookhill magazines. Improvements have been made to the rail siding at Bajool and to the Magazine Keeper's house at Helidon. A new entrance with steel gate was made into the Brookhill reserve near to and under surveillance from the Magazine Keeper's residence.

In April, 1967, several magazines at Queerah were broken into and small quantities of explosives and detonators were stolen. The thieves were not apprehended.

The Field Inspector of Explosives has visited northern magazines as required to inspect and test explosives. He also visited Thursday Island to arrange for bulk magazine storage of some 150 tons destined for oil exploration.

DESTRUCTION OF EXPLOSIVES

The following explosives were condemned as unsafe for use:—

1¼" Special Gelatin 60	21 cases
3" Toval	11 cases
1" Toval	3 cases

All were destroyed by burning at Helidon.

LICENSES AND FEES

Table CXIX shows licenses issued or renewed as at April, 1967 and the corresponding fees collected:—

TABLE CXIX

Category	Number of Licenses	Fees
		$
Importation Licenses	53	530.00
Manufacture (ammonium nitrate–fuel oil)	97	582.00
Carriage	32	192.00
Storage—		
Category I	128	256.00
Category II	17	102.00
Category III	31	620.00
Category IV	17	102.00
Sale	80	320.00
Fruit Ripening	147	147.00
Importation of Ammunition ..	..	1,049.85
Importation of Fireworks	..	682.30
Importation of Explosives, Accessories, &c.	..	2,856.55
Magazine Storage Charges	..	24,395.20
Heat Testing Charges	..	1,128.50
Miscellaneous Collections	..	1,455.98

Collections for explosives purposes from all sources for 1966-67 amounted to $34,818.30.

FIREWORKS

The annual fireworks night in Queensland has now been transferred to the Queen's Birthday in June, a time of the year when the fire hazard is less. Inspections of wholesale stores and retail shops handling fireworks were made for several months before this date.

All importations of fireworks were sampled and tested if necessary and several varieties considered unsafe were prohibited from sale in the State. In all, thirty-nine (39) cases were destroyed.

FRUIT RIPENING

Regular inspections and tests were carried out on fruit ripening rooms and on no occasion was the gas concentration found to be above the permitted maximum. Brisbane ripening rooms are now concentrated in the Rocklea market area and additional rooms are under construction there. The inspector on his visits to the northern bulk magazines has also visited licensed magazines and ripening rooms and investigated other matters which needed attention.

DIVISION OF GERIATRICS

Director of Geriatrics: P. G. Livingstone, M.B., B.S. (Qld.), M.R.C.P. (Ed.)
Medical Officers: M. Cheong, M.B., B.S. (Qld.)
M. R. Connell, M.B., B.S. (Qld.).

GENERAL

The staff of the Division of Geriatrics consists of a Director and two (2) medical officers, a public health nurse, a social worker and one clerk typist. A comprehensive geriatric service is now being provided consisting of the following:—

A Geriatric Unit at the Princess Alexandra Hospital which provides acute geriatric beds for the treatment and rehabilitation of the elderly.

A small number of long-stay beds.

A Day Hospital which provides day patient treatment to patients living within the metropolitan area of Brisbane.

Geriatric out-patient facilities in the hospital outpatient department.

Domiciliary consultations by the full-time staff of the Division.

The public health nurse in geriatrics is providing an important service in the care of the elderly and the social worker in geriatrics is continuing to provide an advisory and casework service specifically for the elderly.

The medical officers of the Division besides providing medical care for the various sections of the Geriatric Unit at Princess Alexandra Hospital also provide medical service to the "Eventide" Home at Sandgate and in the future will be able to assist in the medical care of long-stay patients at the Chermside long-stay section.

GERIATRIC UNIT—PRINCESS ALEXANDRA HOSPITAL

The in-patient wards of the Geriatric Unit have cared for a slightly increased number of patients compared with the previous year. The in-patient beds are probably now being used to their maximum capacity for the type of patients being admitted to the Geriatric Unit. The statistical tables show details of admissions and discharges to the Geriatric Unit for the past year. Table CXX shows admissions and Table CXXI shows discharges.

There is an increase in the total number of patients treated from 805 to 870. Fifty-nine per cent. of patients treated at the Unit were referred from the acute section of the Princess Alexandra Hospital as compared with 55 per cent. in the previous year. Thirteen per cent. of the admissions to the Unit were referred from the Royal Brisbane Hospital as compared with 19 per cent. in the previous year. The number of patients being referred from private medical practitioners remains steady at 22 per cent.

The total number of in-patient beds remains steady at 128 comprised of 50 male beds and 78 female beds. Discharges from the Geriatric Unit total 888 patients for the last year. Fifty-three per cent. of patients were discharged to their own homes compared with 47 per cent. in the previous year. In addition, 10 per cent. of patients were discharged to chronic hospitals run by private organisations and approximately 10 per cent. of patients were discharged to Convalescent Homes.

Day Hospital

Statistical tables relating to the operation of the Day Hospital for the last year are included. There has been an increase in the total number of patients treated to 395 for the last twelve months as compared with 343 patients in the previous year. Sixty-nine per cent. of patients were referred from the in-patient wards of the Geriatric Unit. Eleven point four per cent. of patients were referred from local medical officers and 12·7 per cent. of patients were referred from Geriatric Out-patients. This is a therapeutic Day Hospital and the treatment given to patients is recorded in the tables. Eighteen-point-two per cent. of patients received physiotherapy, 46·1 per cent. attended the Occupational Therapy Department, 10·4 per cent. of patients attended the speech therapist and 10·1 per cent. of patients attended for social reasons.

Medical consultations are available in the Day Hospital each day and patients who are attending the Day Hospital attend this clinic while they are being treated as day patients. This has produced an increased work load for the medical officer attending the Day Hospital but would produce a decrease in work at other out-patient clinics, particularly at Geriatric Out-patients.

One hundred and thirty-one patients were discharged from the Day Hospital during the year. The average length of attendance at the Day Hospital is seven months. This figure does not actually give a true picture of the length of attendance because 56 patients, (14 per cent), attended for 1 month only. Average daily attendance at the Day Hospital for the last 12 months is 46 patients per day, which is an increase from an average daily attendance of 39 patients during the previous year. The highest daily attendance was 60 and the lowest daily attendance was 33. There has been a tendency for increase in the total number of patients attending the Day Hospital over the last three months and it is felt that at the present time the Day Hospital is working at its maximum capacity.

Of the patients discharged from the Day Hospital, 58·3 per cent. were discharged to the care of their local practitioners, 20·5 per cent. were referred to Geriatric Out-patients for further out-patient supervision and 13·3 per cent. were discharged to Convalescent Homes or long-stay institutions.

TABLE CXX

Admissions to the Geriatric Unit and Where from During the Year, 1966–67

Sex	Total	Princess Alexandra Hospital (Acute Section)	Princess Alexandra Hospital (Chronic Section)	Private Homes	Royal Brisbane Hospital	Other Local Hospitals	Country Hospitals	Convalescent Homes	Eventide
Males ..	340	185	2	82	48	12	8	3	..
Females ..	530	329	..	112	66	12	6	2	3
Totals ..	870	514	2	194	114	24	14	5	3

TABLE CXXI

Discharges, Deaths, Transfers from the Geriatric Unit During the Year, 1966–67

Sex	Total	Princess Alexandra Hospital (Acute Section)	Princess Alexandra Hospital (Chronic Section)	Private Homes	Royal Brisbane Hospitals	Other Local Hospitals	Country Hospitals	Convalescent Homes	Eventide	Deaths	Kingshome
Males ..	345	20	21	177	5	24	7	23	25	40	3
Females ..	543	19	25	291	1	64	4	61	26	52	..
Totals ..	888	39	46	468	6	88	11	84	51	92	3

TABLE CXXII

ACTIVITIES AT GERIATRIC DAY HOSPITAL—PRINCESS ALEXANDRA HOSPITAL

Total number of patients treated, 1966–67	395	
Age Group—		
Patients under 60	106	26·8%
Patients 60–70	118	29·8%
Patients 70–80	130	32·8%
Patients 80–90	38	9·6%
Patients 90 and over	3	0·8%
Diagnosis—		
Hemiplegics	217	54·9%
Fractures	38	9·1%
Parkinsonism	13	3·3%
Arthritis	45	11·4%
Amputees	14	3·5%
Head Injuries	16	4·0%
Heart diseases	21	5·3%
Others	36	8·5%
Sources of Referral—		
Geriatric Unit in-patient wards	273	69·0%
Health Department	5	1·2%
Local Medical Officers	45	11·4%
Princess Alexandra Hospital acute section	16	4·0%
Royal Brisbane Hospital	7	1·7%
Geriatric Outpatients	50	12·7%
Treatment—		
Patients who attended Speech Therapy	41	10·4%
Patients who attended Occupational Therapy	182	46·1%
Patients who attended Physiotherapy	309	78·2%
Patients who attended for social reasons	40	10·1%
Patients who attended for Medical consultations only	23	5·8%
Discharged to—		
Local Medical Officers	77	58·3%
Geriatric Outpatients	27	20·5%
Deceased	10	7·9%
Convalescent Homes, Eventide, Mount Olivet, &c.	17	13·3%
Total discharges from the Day Hospital, 1966–67	131	
Average length of attendance	7 months	
Patients who attended for only 1 month	56	14·1%
Average daily attendance	46	
Highest daily attendance	60	
Lowest daily attendance	33	

PUBLIC HEALTH NURSE

The public health sister in the Division of Geriatrics assists patients and their families with any nursing problems, basic and technical, related to home care and the prevention of accidents.

Referrals are usually requested by the Director or one of the Geriatric Unit medical officers. The social worker may request a home visit where a nursing problem has presented.

The patient's local practitioner is always contacted for permission before a home visit, and is duly informed by letter of all recommendations made.

An assessment of the patient's limitations and capabilities, and the medical and social history is made by conferring with the staff in attendance. The patient is then contacted and the purpose of the visit is explained. Permission is always readily given and the home visit occurs the week after discharge. A detailed chart is prepared including a plan of the home, and all recommendations are recorded. This is referred to the Director of Geriatrics during a weekly conference where the action taken is discussed. If necessary, further advice is given and he determines the advisability of further follow-up visits. The follow-up is essential to prevent deterioration, to provide security, and to solve any problems occurring after the initial visit. It often provides the motivation necessary for final independence.

Often the patient has reached the maximum of his physical improvement, and the adjustments to the home are of a permanent nature. The transition to living at home is often difficult and many problems unforeseen in hospital become apparent.

TABLE CXXIII

STATISTICS OF WORK OF THE PUBLIC HEALTH NURSE, 1966–67

Ages of Patients

Under 40	40–50	50–60	60–70	70–80	80–90	Over 90
5	13	27	71	81	37	7

Disease

—	Male	Female	Total
Hemiplegia (Central Nervous Disease)	50	62	112
Arthritis	4	27	31
Fractures and Bone Diseases	7	50	57
Amputations	4	4	8
Cardio-Vascular Diseases	5	5	10
Others	8	15	23
Total	78	163	241

Source of Referral

	Number
Director of Geriatrics	239
District Nursing Association	2
Total	241

Work Load

Number Follow-up visits	88
Number Requiring one visit only	42
Number Requiring more than one visit	9
Number Visits with Social Worker	11
Total Number visits made through year	340

SOCIAL WORK

One hundred and thirty-three cases were referred to the social worker during the year, 115 being new referrals and 18 having been brought forward from the previous year. One hundred and eight cases were closed and 25 carried forward to the current year.

Sources of referral of new cases are set out below:—

Client or Associate direct to social worker	33
Within Health Department, including Director of Geriatrics and Geriatric Unit	29
Other Social Agencies and Departments	17
Domiciliary Services	15
General Practitioners	8
Other State Government Departments	6
Hospital Social Workers	4
Others (including Minister of Religion and M.L.A's)	3

In 119 cases receiving help the presenting problem concerned some aspect of the care of the aged, predominant being either physical illness or disability or accommodation needs. Other aspects complicating the problem were mental illness or subnormality, alcoholism or drug addiction, financial or employment difficulties, community involvement or occupational interests, distress following flood damage, migrants' adjustment difficulties and general family welfare. In 84 cases long-term or intensive casework was necessary, either with the elderley person or with relatives or associates. The opportunity to discuss problems and be helped to face them realistically and with support often enabled families to understand and make allowances for senile behaviour or deteriorating health, to make constructive plans for keeping the aged at home or to face the alternatives of institutional or chronic hospital care.

In other cases where only a brief consultation or short-term casework was necessary this was usually related to the provision of medical care or accommodation, particularly in Convalescent or Aged Person's Homes.

Because very many of the problems relating to health and accommodation were solved by admission to "Eventide" and because initially this was often not the solution most acceptable to the family or the aged person, it would seem desirable for social work contact to be maintained for some time after admission. This has only been possible in isolated cases but indicates an ideal area for possible future extension of service when staff numbers permit.

Although the number of cases actually referred by general practitioners is still not large, only 8, it is almost twice as many as last year and does show a growing awareness of a service which could be of great assistance to what must form a significant group in a general practice. In many other cases particularly with neglected, isolated aged in the community, it was necessary to seek the co-operation of the local medical officer and in all cases this was extended promptly and courteously. Noteworthy also in working with this group which again accounted for a significant number of referrals was the co-operation of the city council health inspectors and the kindly and humane attitude of members of the police force.

There has again been a close working relationship between the social worker and the public health nurse, and a very beneficial liaison with other social agencies, both statutory and voluntary and with the various domiciliary services. Where the latter are concerned their value is demonstrated by the fact that in any area not covered by them (for example, Meals on Wheels or Home Help), this lack is often the deciding factor in accepting institutional placement. A complete coverage by all domiciliary services seems essential and also some decentralization and development on a regional basis of preventive and supportive services.

Difficulty was experienced in placing eight invalid pensioners who were not eligible for admission to Eventide because of age. The problem of their care is often precipitated by the death of elderly patients or heavy personal commitments of other family members. They are accepted by most Convalescent Homes but often they are financially unable to take advantage of this.

During the year social work students from the University have been assigned to do part of their practical training with the Division of Geriatrics. In addition the social worker has been involved in seminars at the University and at the College of Nursing on care of the aged and has been an executive member of the Old People's Welfare Council. It is hoped these activities will not only have an influence on future recruitment to the geriatic field but will also widen the interest in and knowledge of services available to the aged in the community.

MEDICAL STAFF

The Director and Medical Officers of the Division have advised on a total number of 244 cases during the last year. The majority of these cases were referred for advice regarding admission to the "Eventide" Home at Sandgate. Most other referrals were mainly concerning suitability for wheel chairs and other artificial aids, particularly for the elderly.

Since March of 1967 the Director has been on special leave to attend the course leading to the Diploma of Public Health, University of Sydney. He will be absent till December, 1967.

DIVISION OF NURSING

Adviser in Nursing: E. W. S. Sullivan, S.R.N., S.C.M., M. & C.W.C.

SURVEYS

The Division of Nursing has conducted several surveys regarding nurses and nursing during the past year. The survey on the educational standard of student nurses presently in training revealed that 89 per cent. of the student nurses had an educational standard at entrance to training of Junior or better. The survey into student nurses duties revealed that in many hospitals few so called "domestic duties" were performed by the student nurses. A survey on clinical material available in small hospitals revealed the value of the Flying Surgeon, not only for patient care, but also for clinical material for student nurse teaching. One large metropolitan hospital was surveyed and as a result of this there was a re-distribution of student nurses duties. The survey into the wastage of student nurses has been continued and the results are contained in Table CXXIV.

In many instances the wastages from particular hospitals are caused by nurses leaving that hospital to commence at another hospital, so are not wastage in true sense. There seems to be a certain amount of restlessness amongst the youth of today which includes the student nurses, and this moving from hospital to hospital is comparable with girls moving in industry. Many of our student nurses come from other occupations, and this must cause wastage in those occupations. Marriage is still a large contributing factor to wastage and some hospitals are giving the married student nurse an opportunity to complete her training. The Division of Nursing considers that every opportunity should be offered to the married student nurse to complete her training soon after marriage.

COLLEGE OF NURSING, QUEENSLAND BRANCH

The College of Nursing is to be congratulated on the increased numbers of students attending the courses in Nursing Education and Nursing Administration this year. In addition to the two full time courses the College is conducting a short course in Hospital Administration for those Matrons who for various reasons are unable to take the Diploma course in Nursing Administration.

VISITS TO COUNTRY HOSPITALS

Routine visits to country and metropolitan hospitals were made during the year. The following hospitals were visited:—Ayr, Home Hill, Royal Brisbane, Bowen, Clermont, Cloncurry, Collinsville, Charters Towers, Cherbourg, Emerald, Gympie, Hughenden, Ingham, Innisfail, Julia Creek, Kingaroy, Mount Morgan, Mount Isa, Murgon, Richmond, Redcliffe, Rockhampton, Springsure, Townsville, Wondai, Woorabinda, Westwood, Yeppoon, Nanango, Warwick. Accommodation for nurses is being improved in many of the hospitals as well as improvements to patients' accommodation.

MATRONS' CONFERENCE

Seventy-six matrons from hospitals and institutions attended the Matrons' Conference which was officially opened by the Minister for Health (Hon. S. D. Tooth M.L.A.) on 8th May. There was an increase in the number of new matrons attending, and it was stimulating to observe the interest shown by the young matrons in discussion on all subjects. Mr. Tooth informed the matrons that he intended to issue lecture notes on all subjects in the general nursing curriculum to all nurse-training schools in an endeavour to assist the lecturers and the student nurses.

INTERVIEWS

There is an increase in the number of nurses coming from countries outside the British Isles which has increased the number of these nurses interviewed by the Adviser in Nursing. These nurses are registered nurses in their own country and although they have a reasonable knowledge of English, sufficient for conversation, it is often found that they are unable to understand medical terms and orders given in English. They therefore cannot achieve immediate registration in this State and usually take positions where they can work under supervision until they themselves feel they have sufficient comprehension of spoken English to accept the responsibility of a registered nurse. Many married women seek interviews regarding positions, particularly those who are restricted by family responsibilities from hospital work. Numbers of young girls seek the assistance of the Division in obtaining a position as a student nurse, when they have been rejected by the hospital of their choice because of their educational standard. It is at times possible to persuade these girls to continue their education to obtain a higher standard.

TABLE CXXIV

WASTAGE OF STUDENT NURSES—QUEENSLAND HOSPITALS FOR THE YEAR 1966–67

Hospital	Daily Average	Student Enrolment					Total Year 1966–67	Wastage of Students					Percentage of Total	Age Groups						Educational Standard					Reasons Given for Leaving						
		1st Year	2nd Year	3rd Year	4th Year	5th Year		1st Year	2nd Year	3rd Year	4th Year	Total		17 and under	18	19	20	20+	Not known	8th	Sub. Jnr.	Jnr.	Above Jnr.	Not known	Not suited	Fail Exams	Personal	Health	Domestic	Marriage	Others **
Atherton	58·7	19	14	15	10	..	58	..	7	4	..	11	18·97	2	5	3	..	1	..	..	..	10	..	1	..	3	..	..	..	7	1
Ayr	48·5	30	9	7	5	..	51	11	9	4	2	26	50·98	10	6	4	2	4	..	4	7	13	2	..	..	..	10	..	..	8	8
Babinda	14·2	2	1	1	3	..	7	..	1	1	3	5	71·43	..	2	..	..	3	..	..	..	5	..	..	..	..	..	..	..	4	1
Barcaldine	10·3	10	..	1	..	..	11	3	1	..	..	4	36·36	1	2	..	..	1	..	..	..	2	1	1	1	..	2	..	..	..	1
Beaudesert	39·7	11	2	7	2	..	22	2	2	..	3	7	31·82	..	2	1	1	2	1	1	4	2	..	..	2	..	3	1	..	1	
Biloela	16·9	8	5	1	1	..	15	2	4	1	1	8	53·33	1	2	1	1	3	..	..	1	5	2	..	..	..	2	..	..	1	5
Blackall	14·8	2	4	1	2	..	9	..	1	..	1	2	22·22	..	1	..	1	..	..	..	..	2	..	..	..	..	1	..	..	..	1
Bowen	18·1	10	6	1	1	..	18	2	3	1	..	6	33·33	2	1	1	..	2	..	1	..	4	1	..	1	2	..	..	..	2	1
Royal Brisbane	987·0	432	147	148	95	..	822	83	36	20	4	143	17·40	43	49	28	11	12	..	2	1	107	30	3	37	6	24	7	10	17	42
Brisbane Women's	214·1	263	..	..	..	..	263	32	..	..	..	32	12·17	..	..	..	..	32	..	..	..	23	9	..	5	..	13	1	3	5	5
Bundaberg	130·8	53	15	16	16	..	100	6	6	..	6	18	18·00	3	6	4	3	2	..	2	2	10	4	..	6	4	..	..	..	3	5
Cairns	165·8	62	36	26	14	..	138	18	13	4	3	38	27·54	8	12	5	6	5	2	..	2	32	..	4	2	8	10	2	1	10	5
Charleville	48·4	19	10	2	5	..	36	2	8	1	..	11	30·56	1	3	3	1	3	..	1	1	8	1	..	1	1	1	2	..	2	4
Charters Towers	21·6	16	5	4	2	..	27	6	2	2	1	11	40·74	6	1	1	..	3	..	4	1	6	..	..	2	1	1	..	..	6	1
Childers	10·5	1	..	..	..	1	2	2	..	..	..	2	100·00	1	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	2
Chinchilla	28·7	17	3	7	1	..	28	3	1	3	..	7	25·00	1	3	2	..	1	..	..	..	5	2	..	2	..	..	1	2	2	..
Clermont	21·7	5	3	1	..	..	9	4	1	..	..	5	55·56	2	..	..	..	..	3	1	..	1	..	3	..	..	3	..	..	1	1
Collinsville	15·0	6	4	1	1	1	13	..	2	1	1	4	30·77	2	..	..	2	..	..	..	1	3	..	..	..	1	1	..	..	2	..
Dalby	42·2	17	8	8	3	..	36	5	2	1	..	8	22·22	1	3	2	2	..	..	1	..	7	..	..	2	..	4	..	..	..	2
Emerald	18·5	10	2	..	..	..	12	2	2	..	..	4	33·33	2	1	1	..	..	..	1	..	2	..	1	..	..	2	..	..	2	..
Gladstone	52·8	16	5	4	3	..	28	2	8	1	..	11	39·29	4	3	2	2	..	..	..	1	9	1	..	3	2	..	..	4	1	1
Goondiwindi	29·6	12	4	3	4	..	23	3	1	..	..	4	17·39	1	3	..	..	..	..	..	..	4	..	..	..	..	3	1	..	..	..
Greenslopes	415·0	27	6	12	..	..	45	1	3	..	..	4	8·89	..	1	2	..	1	..	..	..	..	4	..	..	..	..	..	..	4	..
Gympie	95·2	38	16	13	15	..	82	5	2	6	1	14	17·07	3	3	5	2	1	..	..	2	12	..	..	1	6	4	..	..	2	1
Ingham	42·3	21	4	2	6	..	33	5	4	..	1	10	30·30	4	3	..	1	2	..	1	2	6	1	..	..	..	2	1	2	2	3
Innisfail	91·8	52	12	8	7	..	79	15	4	4	2	25	31·65	8	9	2	2	4	..	2	11	11	1	..	4	5	9	..	2	2	3
Ipswich	154·9	70	33	25	15	..	143	9	7	8	..	24	16·78	4	3	3	8	4	2	2	2	14	4	2	4	2	7	2	2	4	3
Kilcoy	21·2	10	1	1	..	..	12	1	2	..	1	4	33·33	1	1	1	..	1	..	1	..	3	..	..	1	..	1	..	..	1	1
Kingaroy	25·7	15	8	7	1	..	31	..	3	2	..	5	16·13	..	1	3	..	1	..	1	1	3	..	..	..	..	..	..	1	3	1
Longreach	28·4	10	2	2	..	..	14	2	1	2	..	5	35·71	2	..	1	..	2	..	1	..	4	..	..	2	1	..	..	..	1	1
Mackay	126·1	33	13	9	11	..	66	13	6	4	2	25	37·88	6	7	6	3	3	..	11	4	8	2	..	..	2	12	1	2	..	8
Mareeba	61·0	27	7	5	1	..	40	6	6	1	2	15	37·50	4	4	4	3	..	..	3	6	6	..	..	1	5	4	2	..	2	1
Maryborough	170·6	61	17	14	21	..	113	13	11	1	1	26	23·01	7	8	4	4	3	..	2	6	14	2	2	7	1	1	1	1	7	8
Miles	19·3	8	4	5	1	..	18	3	3	1	..	7	38·89	..	3	2	1	1	..	1	2	4	..	..	1	..	3	..	1	2	..
Mitchell	18·2	9	1	..	1	..	11	2	2	..	..	4	36·36	2	2	..	..	..	..	..	..	4	..	..	..	..	1	..	..	1	2
Monto	14·1	8	2	3	..	..	13	2	1	..	..	3	23·08	..	3	..	..	..	..	..	1	2	..	..	..	..	2	..	..	..	1
Mossman	26·0	7	4	1	1	..	13	..	1	..	..	1	7·69	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1
Mount Isa	82·2	25	12	11	2	..	50	12	2	4	1	19	38·00	5	4	3	..	7	..	7	3	8	1	..	6	2	4	..	1	3	3
Mount Morgan	23·7	19	4	1	4	..	28	7	4	..	..	11	39·29	6	4	1	..	..	..	4	2	5	..	..	1	1	9	..	..	..	..
Nambour	49·3	22	14	4	4	..	44	2	6	1	1	10	22·73	1	2	1	2	4	..	1	1	8	..	..	2	4	..	..	..	3	1
Princess Alexandra	1,051·9	388	162	131	104	..	785	34	32	17	7	90	11·47	10	30	30	7	13	..	..	..	46	44	..	11	6	15	14	5	21	18
Proserpine	21·1	8	5	5	1	..	19	1	..	2	..	3	15·79	2	..	1	..	..	..	1	1	1	..	..	1	..	..	..	..	1	1
Redcliffe	53·7	24	8	4	7	..	43	3	2	..	1	6	13·95	2	..	2	..	2	..	..	1	5	..	..	1	..	2	1	..	2	..
Rockhampton	222·8	75	24	21	18	..	138	10	13	6	4	33	23·91	6	14	5	5	3	..	3	2	24	4	..	8	2	4	1	2	9	7
Roma	30·9	21	2	4	4	..	31	4	1	1	..	6	19·36	4	1	..	..	1	..	1	1	4	..	..	1	1	2	..	..	1	1
Southport	58·3	24	6	7	15	..	52	3	2	1	..	6	11·54	2	1	1	1	1	..	2	1	2	1	..	..	..	2	..	2	..	2
Stanthorpe	34·4	18	8	4	6	..	36	3	2	2	..	7	19·44	3	2	1	1	..	..	1	2	4	..	..	..	1	4	..	..	2	..
Toowoomba	181·1	109	36	26	22	..	193	10	6	4	1	21	10·88	4	6	6	1	4	..	..	..	13	8	..	3	2	4	1	1	6	4
Townsville	277·2	130	38	32	43	..	243	43	11	14	5	73	30·04	16	19	13	12	13	..	3	16	43	11	..	28	15	10	4	3	9	4
Warwick	69·5	27	5	10	9	..	51	6	3	..	..	9	17·65	5	3	1	..	..	..	..	1	6	2	..	4	..	2	..	1	2	..
Winton	17·4	2	1	2	..	..	5	1	1	1	..	3	60·00	..	..	3	..	..	..	..	..	2	..	1	..	..	2	..	..	1	..
Wondai	28·9	18	4	5	3	..	30	4	5	..	2	11	36·67	2	4	3	2	..	..	1	2	7	1	..	2	3	1	..	1	1	3
Totals	..	2,327	742	628	490	2	4,189	408	256	126	57	847	20·22	201	243	162	87	145	9	67	91	531	139	19	153	87	187	43	47	166	164

** Dissected as follows:—

Left without notice	34
Left the district	26
Homesick	6
Another position	12
Retired or dismissed	27
Misdemeanour	4
Unsettled, unhappy	5
Disinterested	4
Can't study	6
Train elsewhere	16
Asked to discontinue	11
No reason given	8
Miscellaneous	5
	164

DIVISION OF SOCIAL WORK

Adviser in Social Welfare: M. K. WHILEY, B.A., Dip.Soc.Stud. (Melb.)
Social Worker—Geriatrics: E. P. DOBBYN, Dip.Soc.Stud. (Q'ld)
Social Workers—Health and Medical:
M. B. PULEA, B.Soc.Stud. (Q'ld.), till February, 1967
G. GEHRMANN, B.Soc.Stud. (Q'ld.), from January, 1967
S. CAMERON, B.Soc.Stud. (Q'ld.), from January, 1967

STAFF

This year for the first time, staffing of social work services has been easier. A greater number of social work graduates from the University of Queensland became available to fill vacancies in the field. As a result of this increase there have been encouraging developments in some services, while social work in other sections, previously hampered through inadequate staff, is now being consolidated.

Since the inception of the Division seven years ago, the acute shortage of trained personnel has made it difficult to establish and maintain even basic services in some fields and little real expansion has been possible. However this situation appears to be changing. Social work training has now been established in Queensland for ten years, and with increased University staff, better training factilities, and more social workers in the field experienced in student supervision, the community can reasonably expect to rely on a steady stream of local graduates for this work.

FUNCTION

The Social Work Division, originally set up to study social needs and to advise on priorities for establishing social work services, has now developed as an integral part of the Health and Medical Services with the following main functions:—

1. Studying and advising on social needs with special emphasis on social welfare aspects of the health field.

2. Developing and co-ordinating social work services within the Health and Medical services.

3. Liaison with social work services in hospitals and with other State Government Departments concerned with social welfare programmes.

4. Provision of a social casework service within the community; (a) as part of a preventive health service, and (b) to meet the needs of families and patients whose social problems are linked in some way with a health or medical problem. In practice this would not include hospital or psychiatric clinic patients who would usually have access to their own social workers.

PSYCHIATRIC SOCIAL WORK

During the year, the most noticeable expansion has occurred in psychiatric social work. In January, three social workers were appointed to new positions at Brisbane Special Hospital, one to the Neuro-Psychiatric Unit at Chermside Hospital and another to the Psychiatric Clinic in Mary Street. At the same time the part-time social work service in the Alcoholism Clinics was replaced by a full-time service. Social work services, previously established, continue to function at Lowson House, Royal Brisbane Hospital, and at Toowoomba Special Hospital.

In Brisbane Special Hospital, priority is initially being given to assisting patients with their resettlement problems on their discharge from hospital. The Hospital has been divided administratively into three treatment units, one social worker providing service within each unit. When the medical officer anticipates problems in a patient's re-employment, accommodation, social service payments, family relationships, or other areas likely to affect the patient's recovery and rehabilitation, the social worker assists by offering guidance and information about any practical help the patient may require, but more especially through a supportive relationship enabling the patient to overcome the difficulty, often through his own resources.

The recent amendment to the Social Services Act, which provides for a patient's Pension or Sickness Benefit to be re-instated to cover the last twelve weeks of a patient's stay in a Special Hospital, now greatly assists many patients, and financial hardships experienced during the resettlement period by many former patients can now often be avoided.

More recently the social workers at the Brisbane Special Hospital have also been involved in therapy programmes with patients attending the Industrial Therapy Unit. This should facilitate earlier contacts with patients and their relatives, and so enable some patients to be helped with their social problems during the course of treatment, thereby assisting in the long term plans for the patient's recovery and rehabilitation.

At the Psychiatric Clinic in Mary Street, patients who do not require hospital care are being assisted with employment, social activities, and family relationship problems, as part of their out-patient psychiatric care. Although it is not possible for the existing staff to cover all aspects of psychiatric social work for the clinic patients—the forensic psychiatry service, for example, is still without its own social worker—a contribution is being made to diagnostic studies through assessment of patients' social relationships and environment.

Of special importance is the help given by the Clinic social worker when relatives need to arrange for a mentally ill patient's admission to hospital on a compulsory order. These patients require skilled and sympathetic management.

Unfortunately very little service is yet available in the country districts. Through a part-time social work service at Toowoomba General Hospital some psychiatric clinic out-patients with urgent social problems, receive some assistance, and the medical social worker at Townsville Hospital makes some time available for work with psychiatric patients, but is unable to extend the service yet if a patient is transferred for admission to Mossman Hall, Charters Towers.

The new position of Senior Social Worker—Psychiatric Services, through which these services will be co-ordinated, remains vacant, because an experienced person is not yet available.

The field most in need of psychiatric social work services at present is that of the mentally sub-normal. When suitable staff can be obtained during the coming year, this work will be given priority.

YOUTH WELFARE AND GUIDANCE

Social work is well established in this Division, the first social workers having been appointed to work with child guidance teams in Brisbane seven years ago, and the service maintained continuously since its inception. During this time, social workers counselling parents in child guidance problems have been doing valuable preventive work.

Two interesting preventive aspects of work in this field are worth noting. First, at the Wilson Youth Hospital close liaison is being maintained with the Juvenile Aid Bureau, and through this co-operation it should be possible to assist young people with emotional problems which might otherwise have led to delinquency and appearance before the Children's Court.

The other is the work with school children at the Institute of Child Guidance, Brisbane. Here the social worker, working closely with the psychiatrist, has paid special attention to families whose children have school problems for which they are attending the "Day Hospital" regularly for treatment.

The problems fall mainly into the following four categories:

(1) school attendance problems;
(2) educational retardation and learning problems;
(3) serious personality disorders;
(4) pre-school children, many of whom have marked speech disorders.

Through parent counselling, the social worker assists with interpersonal and social problems which appear to be affecting the child. Where this results in more satisfactory school adjustment it is likely that more serious problems may be prevented.

Although there are plans to extend social work in the child guidance field to Townsville and Toowoomba, this is not yet possible.

SOCIAL WORK IN HOSPITALS

The Cairns Base Hospital, which had been without a social worker for some time, reopened its social work department in February this year, when Miss A. Murray, a recent graduate in social work, returned to North Queensland to take up the appointment as social worker.

At the same time, a second position was created in the social work department at Townsville Hospital, and Miss J. Behan was appointed to assist Mrs. J. Reid who for many years has carried a heavy case load as the hospital's only social worker. Mrs. Reid plans to visit medical social work departments in America during her long service leave this year.

Medical social work in North Queensland is difficult and challenging, since the base hospitals serve a wide geographical area and patients' social problems are frequently associated with the need for specialist medical care some distance from their own homes. The medical social worker can often effect a valuable liaison with relatives and various forms of assistance, and thus, by diminishing patients' anxiety, help towards their recovery.

In addition to the more personal casework with patients, it is necessary for social workers in more distant areas to spend some time assisting in developing community welfare resources through which many patients may in turn be assisted. The absence of any suitable private or church nursing-home for aged patients, or for young chronically disabled patients, requiring fairly heavy nursing care is causing special concern to the social workers in Townsville at present.

Chermside Hospital, Brisbane, opened a social work department in January this year when two new social workers were appointed. The first, whose duties will be confined to the needs of patients of the Neuro-Psychiatric Unit, should make an important contribution to psychiatric social work services. The other, a medical social worker, assists patients in the major Thoracic and Cardiac Units. Because long term supportive work is often necessary for the successful rehabilitation of these patients, the Chest Hospital social worker will work in close co-operation with social workers in General Hospitals, the National Heart Foundation, and the Health Department, thus ensuring for the patient and his family, continuity of emotional support and assistance during all stages of treatment and resettlement in the community.

At Princess Alexandra Hospital, this year has been one of consolidation. Some treatment units cannot be covered yet by the existing social work staff, but specialised social work service is offered for patients in medical, spinal injury, and eye units, where the need in previous years has proved to be most intense. In these units, social workers functioning as members of a medical team can contribute much to a patient's successful rehabilitation, especially if he is a young adult.

In the Marjory Warren Geriatric Unit some important work is being carried out with aged patients attending the "Day Hospital". Here the social worker facilitates contact between the hospital and the patient's family. Through such a supportive relationship, while the patient attends the Day Hospital, many aged folk who might otherwise need admission to an institution can be cared for in their own familiar environment.

At Royal Brisbane Hospital, this year has also been a year of consolidation, since staffing difficulties have been partly overcome as a result of the increased number of new social work graduates. Some units are not yet fully covered, but patients in all units may receive help with urgent problems.

A new development this year was the appointment of a social worker as a member of the treatment team in the Alcoholism Clinic. This work is also extended on a part-time basis to the Alcoholism Rehabilitation Centre at Wacol.

The social work service at the Women's Hospital continues to function, but it will not be possible to extend the work to the Children's Hospital until an experienced social worker becomes available.

Although social work services need to be extended in all the main public hospitals, the problem of staffing hospital social work departments in the main provincial cities would still appear to be the most urgent, because patients in these areas do not have access to other resources.

For most of this year Toowoomba General Hospital has been without a social worker, but a part-time service is now available for psychiatric patients and some other patients who need urgent assistance.

In Mackay, the newly constituted Mackay Council of Social Welfare has focussed attention on social welfare problems in the area, particularly in family welfare. When the Adviser in Social Welfare visited North Queensland this year, she discussed with the Medical Superintendent the feasibility of setting up a medical social work department within the Mackay Hospital. At this stage however, it seems unlikely that suitable staff and other resources will be available for at least another year, but the position will be kept under review.

The position of social worker, Rockhampton Hospital, is still vacant.

COMMUNITY CARE

Social workers in the Division, located in the Health and Welfare Building, Brisbane, assist mainly with problems presented by or on behalf of people whose social problems are linked with a health problem, but who, at the time, are not in touch with a hospital, psychiatric clinic or child guidance centre.

Many requests come direct to the social worker as the service becomes better known, but the majority are referred to the social worker via other Departmental services.

During the past year, 273 cases have received some attention from a social worker, 133 of these being social problems in the geriatric field, while the other 140 cases were requests for assistance to families and other people in need. Of these, 190 were new-client requests, and 83 cases had been known previously to a social worker in the Department.

Since these clients would not at the time have been eligible for social work assistance through a hospital or clinic, this work can indicate areas for research into unmet social needs in the community. One might question also whether some of the problems could have been prevented, and this information might be of value in planning broader health and welfare services.

With this in mind, an analysis of these requests below is of interest:—

	Family Welfare	Geriatrics	Total
Number of Cases			
Cases current on 1st July, 1966	28	18	46
Cases re-opened from a previous year	26	11	37
New-client cases	86	104	190
Total	140	133	273
Cases Closed	86	108	194
Current cases to be carried forward on 30th June, 1967	54	25	79
Total	140	133	273
Source of Referral			
Health Department	43	25	68
Director-General	2	2	
Chest Clinic	5	2	
"Eventide"	..	3	
Director of Geriatrics	..	13	
Health Inspectors	2	1	
Microbiology and Pathology	6	..	
School Health Services	28	1	
Welfare Officer	..	3	
Other State Government Departments	13	5	18
Aboriginal and Island Affairs	2	..	
Children's Services	4	..	
Education	4	..	
Housing Commission	..	2	
Migration	2	..	
Police	..	3	
Probation	1	..	
Hospitals	3	5	8
Other Social Agencies and Departments	8	29	37
Home Nursing Services	1	13	
Municipal Councils	2	1	
Ministers of Religion	3	1	
Department of Social Services	1	11	
Other Agencies	1	3	
Client or Associate direct to Social Worker	16	30	46
Private Medical Practitioner	3	8	11
Members of Parliament	..	2	2

Reasons for Referral:

Geriatrics:

Requests relating to the care of the aged were frequently precipitated by illness and the need for more appropriate accommodation. After an initial visit, the problems were often found to be more complex, and sometimes linked with mental illness, alcoholism, financial problems, or the general welfare of the family. Arranging care for the aged person is a very personal thing, often involving deep emotional conflicts for another member of the family. Through the supportive social work relationship, families were often enabled to face problems, to understand and make allowances for senile behaviour or deteriorating health, and to choose realistically between continuing home care or finding suitable care in a hospital or home for the aged.

Family Welfare:

A high percentage (32·5%) of the requests for family casework service were referred to the social workers through the School Medical Officers. These included some fairly simple situations. For example, migrant families were assisted with information about medical facilities where a child's health problem might otherwise have been left untreated during the early period of adjustment in a new country. However, the majority of cases were more complex, often requiring fairly intensive casework.

Requests included problems in the following categories, frequently more than one problem being present on referral (see below):—

Reasons for Referral:	
Illness or disability	11
Psychiatric condition	8
Mental deficiency	4
Alcoholism	2
Family welfare	21
Marital relationship	4
"Cot-death"	6
Child welfare	16
Child health	10
Education or School adjustment (including 1 adult reading disability)	17
Unmarried mother	6
Adoption	3
Employment	10
Accommodation	10
Financial circumstances	9
Transport for medical treatment	2
Other	4

Some groups stand out, crystallizing as the responsibility of social work in the public health field.

First, there are the socially inadequate families, whose problems are complex and interwoven, and who require assistance with several aspects of family living, or for several members of the family at the same time. For this reason their problems are not usually suitable for social work in a more specialised medical or psychiatric setting where services tend to be more specifically patient-focussed. These families require long-term supportive casework, and progress is often slow, but the work is a necessary aspect of a preventive medical service, since the health (particularly the mental health) of children in these families is often at risk.

Some of these families are of Aboriginal descent and their problems reflect the increasing movement from rural to urban living, while many are still inadequately prepared for the more complex social demands of city life. Housing, regular employment, budgetting and finance, and educational adjustment, especially for the older primary school children, are amongst the areas for which they need assistance.

Secondly, there are the incipient psychiatric conditions for which the patient, frequently a parent, may not yet be receiving treatment. Where possible, the social worker will encourage these patients to seek psychiatric help voluntarily, but this is not always possible, and continuing social work support needs to be given if family living is not to disintegrate. To assist the social workers in this aspect of the work, group psychiatric consultation has been made available for the Division through the Psychiatric Clinic, Brisbane.

The number of unmarried mothers seen by social workers in this Division is not large, but requests to the social worker are frequently made before the patient has sought medical treatment. Skilled counselling at this stage can often assist the mother towards a realistic plan for her own rehabilitation and for her child's future.

School adjustment problems comprise an important group in terms of preventive mental health. By interpreting the child's problem to parents, and by helping them understand and accept the need for help, the social worker has assisted many families to seek guidance in the early stage of a problem which might otherwise have led to serious educational maladjustment. Unfortunately, this service, which is available through liaison with the School Health Services, can be offered only to some primary school children. The needs of secondary school children, especially in the early adjustment stages, will be kept in mind when additional staff can be obtained.

VOLUNTARY ORGANISATIONS

During this year, there has been much evidence that voluntary organisations are assuming increasing importance in social welfare. Five trained social workers are now employed by voluntary agencies concerned with handicapped children and five others are engaged in services offered through churches and concerned with the social well-being of families.

In Mackay, the recently constituted Mackay Council of Social Welfare now co-ordinates a number of health and welfare services in the district. It is exploring ways of establishing a skilled family welfare service, to assist local residents, especially patients known to the home-nursing services in the district, and families with marital problems who are at risk of complete breakdown.

LIAISON WITH OTHER ORGANISATIONS

In addition to the work directly associated with patients' social problems, social workers in the Health Services have participated in voluntary activities concerned with the general social well-being of the community, and in this way are contributing indirectly to preventive family welfare and mental health.

The Adviser in Social Welfare has held office in the Council of Social Service of Queensland which facilitates co-operation between organisations concerned with social welfare. She has been a representative of the Queensland Council on the Australian Council of Social Service which is in turn affiliated with the International Council on Social Welfare. Some time has also been allocated to activities of organisations concerned with child welfare, home-nursing, youth leadership training, and health problems of urban development.

The social worker in the Division of Geriatrics, is an executive member of the Queensland Old People's Welfare Council and has been readily available for consultation on social welfare facilities for the care of the aged.

Social workers in the Division of Psychiatric Services have been interested in community activities in the mental health field. During the year, one of them represented the Department on the Griffiths House Committee for rehabilitation of the mentally ill patients.

Social workers in the Welfare and Guidance Clinics have participated in preventive and training aspects of services in the community. One has taken an interest in student training and in voluntary activities concerned with family and child welfare, and marital counselling. Another is assisting in the organisation of the Tenth National Conference of Social Work, the first of its kind to be held in Queensland. A third has been active in the Council of Social Service of Queensland, and is on a committee which is organising a seminar on the problems of unmarried motherhood and the care of children born out of wedlock.

There is still no Local Authority in Queensland employing a social worker to meet local needs, although in Brisbane there has been close co-operation in some cases, especially in the care of the aged, between City Council health inspectors and social workers in other services.

PREVENTIVE SOCIAL WELFARE

Because of the acute shortage of trained staff during the seven years since the inception of this Division urgent social needs have received priority. Where possible, the Adviser in Social Welfare's time has been made available to assist in the planning of broader social welfare services, for example, through legislation committees, and there has been close liaison with some voluntary organisations. However, most social workers have been appointed for casework related to special areas of social need. From a review of problems referred to social workers in established services, and from observations made by the Adviser in Social Welfare on a recent visit to North Queensland, it is evident that preventive services must receive higher priority as funds and trained staff become available.

The possibilities of even closer liaison with preventive health services, for example, School Health Services, health inspectors in country districts, tuberculosis prevention services, and with officers of other departments concerned with broad social welfare services, will be kept constantly under review.

STUDENT TRAINING

Again this year departmental facilities have been made available to the University for practical training for social work students. The Department is represented on the Board of Studies in Social Studies, University of Queensland, and several members of the social work staff in this Division, Psychiatric Services, Geriatrics, Welfare and Guidance Clinics, and the major Hospitals in Brisbane and Townsville are approved by the University as student supervisers.

Of special interest is the Student Training Unit set-up this year at Brisbane Special Hospital, through co-operation between the University and the Division of Psychiatric Services. In the Unit, students receive practical training, integrated with theory in psychiatric social work, under the supervision of a field member of the University staff.

SCHOLARSHIPS

Three more scholarship holders graduated in Social Studies this year, and since January these have been engaged in social work in Psychiatric Services, Alcoholism Clinics and public health work. This makes a total of six social workers, currently employed in the Health and Medical Services, who have received their training under the State Government's scholarship scheme. Sixteen more students are at present in training, three of whom will be available for employment in February, 1968. Further scholarships will be offered under this scheme in the coming year.

FLYING SURGEON SERVICE

Flying Surgeon: D. B. LEAMING, M.S. (Durham), F.R.C.S. (Eng.), F.R.A.C.S.
Anaesthetist: A. G. SMITH, M.B., B.S. (Q'ld).
Pilots: Captain IAN CAMPBELL
Captain PETER DETTRICK

The Flying Surgeon Service makes routine and emergency visits to Aramac, Barcaldine, Blackall, Clermont, Cloncurry, Collinsville, Emerald, Hughenden, Julia Creek, Mount Isa, Muttaburra, Mitchell, Quilpie, Richmond, Roma, Surat, Springsure, and Winton. The Flying Surgeon is also visiting specialist in general surgery and urology to Mount Isa Hospital.

The base is at Longreach and the Flying Surgeon team is able to reach a majority of towns in a little more than an hour so the time taken to arrive at any centre is little more than that required to prepare the operating theatre in a country hospital.

During the year 1966-67 the Service has continued to give a consultant surgical service to the people of Western Queensland. During this period a total of 94,304 miles were flown, 1,772 patients were seen, and 298 emergency and routine trips were flown. The number of operations carried out was 703 of which 140 were emergencies.

The Service is responsible for a large number of patients being cared for in a hospital near their home rather than travelling long distances to larger centres for consultation or operation with consequent family upheaval and unavoidable expense. Of far more importance is the availability of a surgeon in emergency and many lives have been saved as a result of the Service.

As an indication of the confidence shown in the Flying Surgeon many patients absent from their homes prefer to return from larger centres when surgery is necessary. This would indicate that the idea of bringing a specialist team to the patient instead of transporting the patient to the specialist has been more successful than could have been foreseen.

Another important aspect of the Service is the support given to the doctors in one-doctor towns. These are usually graduates who have had only one year in hospital and the routine visits enable discussions on recent advances in medicine and consultations in regard to patients who are causing worry.

The people of the west covered by the Flying Surgeon Service have come to accept it as part of a health service which has given them some security and peace of mind in illness. The institution of the Flying Surgeon Service was a major advance not only in Australian medicine but in world medicine and it has been the subject of enquiry from many countries overseas.

LEGISLATION

"*The Health Acts,* 1937 *to* 1964," were amended as follows:—

"*The Health Acts Amendment Act of* 1966," assented to on 15th December, 1966, amended "*The Health Acts,* 1937 *to* 1966," as follows:—

Repealed section 130 of the Principal Act and inserted in its stead a new section 130 which—

(1) Extended the provisions with regard to restriction on possession, supplying or procuring dangerous drugs to include also any other drug for the time being declared by the Governor in Council to to a dangerous drug;
(2) Increased penalties for offences under section 130 (1);
(3) Extended the powers of members of the Police Force in respect of detention, search, seizure and arrest;
(4) Placing upon the person the burden of proof of being licensed or authorised under the Act;
(5) Extended the Director-General's power to make regulations in respect of dangerous drugs and other drugs for the time being declared, including prescribing penalties not exceeding one thousand dollars for breaches of such regulations.

An Order in Council dated 12th January, 1967, and published in the *Government Gazette* of 14th January, 1967, declared beta-aminopropyl-benzene (amphetamine), except in certain inhalation appliances, to be a dangerous drug for the purposes of sections 130 and 131A of "*The Health Acts,* 1937 *to* 1966."

An Order in Council dated 9th February, 1967, and published in the *Government Gazette* of 11th February, 1967, rescinded the Order in Council published in the *Government Gazette* of 14th January, 1967, re-declared beta-aminopropyl-benzene (amphetamine) to be a dangerous drug and also declared barbituric acid to be a dangerous drug for the purposes of section 130 and 131A of "*The Health Acts,* 1937 *to* 1966."

"*The Health Acts Amendment Act of* 1967," assented to on 7th April, 1967 amended "*The Health Acts,* 1937 *to* 1966," as follows:—

Sections 31, 75 and 76 were amended to conform with relevant provisions of "*The Registration of Births, Deaths and Marriages Acts,* 1962 *to* 1967."

Section 31 was also amended to provide that no provision of this section shall be construed so to prejudice or affect—

(*a*) The provisions of "*The Registration of Births, Deaths and Marriages Acts,* 1962 *to* 1967"; or
(*b*) The provisions of "*The Children's Services Act of* 1965."

Section 152 (1) was amended by—

(*a*) Substituting the reference to "therapeutic substances" under the *Therapeutic Substances Act of* 1953 of the Commonwealth with "goods for therapeutic use" under the *Therapeutic Goods Act of* 1966 of the Commonwealth;
(*b*) Giving to the Director-General increased scope for the making of regulations in respect of poisons, restricted drugs, dangerous drugs, biological preparations or goods for therapeutic use.

An Order in Council dated 1st June, 1967, and published in the *Government Gazette* of 3rd June, 1967, rescinded the Order in Council dated 9th February, 1967, re-declared beta-aminopropyl-benzene (amphetamine) and barbituric acid to be dangerous drugs; in addition declared lysergic acid diethylamide, its derivatives, lysergic acid, bufotenine, dimethyltryptamine, mescaline, psilocybine and their derivatives with hallucinogenic properties to be dangerous drugs.

"The Private Hospitals Regulations, 1937" were amended as published in the *Government Gazette* of 20th August, 1966, by deleting clause 2 of schedule 2 and substituting a new clause 2 prescribing new dimensions of ceiling height and floor space for patient accommodation.

"The Convalescent Home Regulations, 1963" were amended as published in the *Government Gazette* of 27th August, 1966, to provide that from and after 1st September, 1966, premises newly licensed as convalescent homes shall be constructed of fire resistant materials.

"*The Radioactive Substances Act of* 1958" was amended as follows:—

Section 13 was amended to clarify the position of a person acting, or having in possession for the purpose of acting, under the supervision and instruction or upon the request of a licensed medical practitioner or dentist in respect of a radioactive substance used for treating a human being.

Section 14 was amended as follows:—

Subsection (2) was omitted and replaced by a new subsection (2) which clarified the position of a person acting in respect of the use of irradiating apparatus as in Section 13 in respect of a radioactive substance.

Subsection (3) was omitted and replaced by a new subsection (3) which clarified the position with regard to exemption from the necessity of holding a license in respect of irradiating apparatus used solely for the purpose of diagnostic radiography.

"The Tuberculosis Regulations of 1955" were amended as published in the *Government Gazette* of 17th December, 1966, altering the age of compulsory examination of persons from over fourteen years to twenty-one years and over.

ACKNOWLEDGMENTS

I have much pleasure in recording my gratitude to all members of the staff for their loyal service, support, and conscientious attention to duty.

Acknowledgment is also made to the Agent-General for Queensland and his officers for the assistance given me whenever it was asked for, and to other Government Departments for their co-operation, particularly the Government Statistician, Mr. S. E. Solomon; the Assistant Supervisor, Demography and Social Section, Bureau of Census and Statistics, Mr. A. Johnston; and Mr. V. H. McLean, Senior Compiler, who, as usual, have been of great assistance in preparing the vital statistics section of this report and have supplied other statistical details from time to time throughout the year. I would also thank Mr. L. A. Stevens, Registrar-General, for his help in regard to the registration of perinatal deaths.

Every assistance has been given by the President (Dr. C. C. Wark) and members of Council of the Australian Medical Association, Queensland Branch, and I am indebted to them for the help they have given me. I also acknowledge the co-operation I have received from my colleagues in the profession.

I would also thank the members of the various expert committees who have given so freely of their time and advice.

I desire to acknowledge the co-operation I have received from the Medical Superintendents of the base hospitals and would particularly thank Dr. A. D. D. Pye, General Superintendent, Royal Brisbane Hospital, and Dr. O. W. Powell, Medical Superintendent, Princess Alexandra Hospital, for the assistance they have given during the year.

ANNUAL REPORT OF THE NATIONAL MOSQUITO CONTROL COMMITTEE, 1966–1967

The Committee's activities include education, identification, advisory, field and laboratory work on mosquitoes. Educational activities are not initiated but are undertaken in response to specific requests, and during the current period included a lecture to Health Inspectors, and a seminar to postgraduate students. "A Handbook of Common Queensland Mosquitoes" prepared by Dr. E. N. Marks as a laboratory manual for courses for Health Inspectors is being used by the University's Departments of Parasitology and Entomology, for courses in medical entomology; the first issue sold out and a revised edition was published.

Identifications provide a service to State and Local Authority Health Departments and to others concerned with public health or insect-borne diseases. The Committee's Senior Research Officer, Dr. E. N. Marks, is the only scientist in Australia and New Guinea engaged full-time in work on mosquito systematics. Consequently specimens are received for identification from all parts of Australia and from New Guinea.

The number of collections submitted by Local Authorities in Queensland has increased viz.—1962-63, 7; 1963-64, 14; 1964-65, 19; 1965-66, 40; 1966-67, 27. The large increase in 1965-66 was partly due to the *Aedes aegypti* survey, and partly to the increased interest engendered by courses for Health Inspectors provided in 1965-66.

Identifications are accompanied by advice on the habits, breeding places and public health importance of the species concerned. Requests for information on control problems are also answered.

Field Projects.—The major project in hand is a study of the mosquitoes of south-west Queensland and their seasonal distribution in collaboration with Mr. J. E. Wright, Rabbit Control Officer, Department of Lands. Approximately 3,264 mosquitoes collected by Mr. Wright in the Cunnamulla District from September, 1965, to April, 1967, have been identified, including 2,634 collected since 1 July, 1966. This is the first time that regular mosquito collections have been made throughout the year in any part of Australia's arid zone (which includes areas of Queensland with under 20 inch annual rainfall) and 23 species were included. The collecting covers periods both of drought and of good rainfall and provides information on the species composition of mosquito plagues occurring at different times of year and in different types of country, as well as in the town of Cunnamulla. This may have considerable medical importance, as a route through the far west of Queensland has been postulated as the way in which Murray Valley Encephalitis virus is occasionally carried (either by mosquitoes or birds) from northern Australia to the Murray Valley. It will also be valuable to the Rabbit Control Authority in planning myxomatosis inoculation campaigns. Detailed results of the Cunnamulla Survey are now being collated for publication; a general article on arid zone mosquitoes has already appeared. Mr. Wright has recently moved to Goondiwindi where a similar collaborative project will be undertaken.

Field work in several other localities of south-east Queensland has provided useful additional information on some little known species and included the first extensive collection on Fraser Island, where 27 species were taken.

Laboratory studies also embrace taxonomic work, description of new species and previously undescribed larvae and pupae. The total number of mosquitoes known from Queensland is 188, including three new species discovered during this year's investigations, two from Cunnamulla and one from Fraser I. Descriptions of these will be included in several papers which are in preparation. Assistance has been given to other workers on mosquitoes, by loan of specimens or by checking their findings against specimens in the collection.

1. PUBLIC HEALTH

Identifications and advice were provided on mosquitoes submitted by the following:—

Brisbane City Council	2 samples
Burnett Joint Health Board	5 samples
Cairns City Council	2 samples
Cardwell Shire Council	1 sample
Etheridge Shire Council	1 sample
Ipswich City Council	3 samples
McKinlay Shire Council	1 sample
Mount Isa Shire Council	2 samples
Mulgrave Shire Council	2 samples
Mundubbera Shire Council	1 sample
Murweh Shire Council	1 sample
Richmond Shire Council	1 sample
Rockhampton City Council	5 samples

Requests for advice on mosquito problems were answered for the Health Inspectors of—

Banana Shire Council;
Barcaldine Shire Council;
Bowen Shire Council;
Townsville City Council.

Other insect pests were identified for—

Balonne Shire Council (per Health Department)—flies;
Brisbane City Council—flies (3 samples);
Maryborough City Council—caterpillars;
Mulgrave Shire Council—flies;
Townsville City Council—flies;

Mosquitoes were also identified for—

Divisional Veterinary Officer, Department of Primary Industries, Mount Isa;
Animal Industry Branch, Northern Territory Administration, Alice Springs, Northern Territory (2 samples);
O.C., R.A.A.F. Base, Darwin, Northern Territory;
Mr. E. J. Britten, Dept. of Health, Western Australia (from Derby, Western Australia) (2 samples).

Dr. E. N. Marks lectured to the Annual conference of the Queensland Branch of the Health Inspectors' Association of Australia on "Packaging of Mosquitoes and Larvae for identification". The association circulated copies of the lecture to all its members.

2. AEDES AEGYPTI SURVEY

During the period September-November, 1966, specimens of *A. aegypti* were received from Mundubbera, Bundaberg and Rockhampton (breeding in rainwater tanks) and from Gordonvale (breeding in a flower vase, and reported by Mulgrave Shire Health Inspector as only the second time it had been found in Gordonvale in the last two years.) In April it was taken at Cardwell.

3. FIELD WORK

Fraser Island, 30 *April–6 May.*—The 5 species previously recorded from the island were included in the 27 species collected. Since there was no opportunity to collect at night in suitable sites nor to collect at all in the extensive heath-swamp areas on the western side of the island, the species list is undoubtedly very far from complete. The mosquito fauna is generally similar to that of the Noosa-Tewantin area, but several unusual findings suggest that further collecting on Fraser I. could be particularly interesting. These included (*a*) the first record of *Aedes candidoscutellum* biting man. This is a rainforest species previously known only from larval collections and laboratory-reared adults. (*b*) *Tripteroides marksae* (or a closely allied species) attracted to man in large numbers in forest close to the Forest Station. *Tripteroides* have not been encountered in such numbers in south Queensland before though in New Guinea (with other species of the genus) this would not be unusual. (*c*) A new undescribed species of *Culiseta* was collected for the first time, attracted to man near the Forest Station. Species of this genus are quite common biting in the bush in Victoria, but the only species previously known from Queensland, *C. antipodea,* has not been taken biting. (*d*) *Anopheles corethroides* biting man in considerable numbers in forest near the Forest Station. There are very few biting records for this species, even in places where larvae are present in quantity, so this occurrence was quite exceptional.

Camp Mountain, 13 November.—Larvae of *Aedes theobaldi,* a species which breeds in temporary pools, were collected from rain-filled grassy depressions. This is the first time *A. theobaldi* has been collected in or near Brisbane during the last 20 years. An allied species, *Aedes normanensis,* has usually been found in these same depressions after rain, but was not taken on this occasion. *A. theobaldi* is the common species in similar sites from the Darling Downs west to about Roma. An interesting point here is that *A. theobaldi* was originally described in 1903 from specimens collected by T. L. Bancroft in or near Brisbane, and these may, like the Camp Mountain specimens, have been taken at the end of a prolonged drought (1902). This suggests that quite considerable and unexpected alterations in the distribution of a species may result from a series of abnormal seasons.

Useful material was also obtained from collections at Maleny, Buderim, Green Mountains, and at Coolatai, New South Wales, and at various localities in Victoria.

4. MOSQUITOES IN THE CUNNAMULLA DISTRICT

Mr. J. E. Wright's extensive collections were accompanied by notes on the collecting site, weather conditions and recent rainfall. They were principally collections of adults biting man, with some trapped over rabbit warrens or resting in rock shelters, and a small but important series of larval collections. Collation of the data is not yet completed, but it gives clear indications as to which species occur most commonly in the different types of country encountered. These large collections of good specimens show that two species are at present being included under the name *Aedes eidsvoldensis*. Mr. Wright has discovered the larvae and males of one of these, and also females of a new and aberrant species of *Aedes* (*Macleaya*).

5. MOSQUITOES IN A BRISBANE SUBURB

Mr. J. T. Brooks has continued his regular collections at Taringa.

As has been noted before, a wet summer often leads to a reduction in *Aedes vigilax* invasions. In this case the only really heavy infestation was in mid January with lesser ones in December and February, though the species was taken from September to April. *Aedes notoscriptus* was present in small numbers throughout the year; this species breeds in treeholes as well as artificial containers and in a wet season is likely to have many small breeding places available to it in older suburbs with well-established trees. *Culex annulirostris* was present throughout the summer but there was no large invasion by this species as sometimes occurs after heavy rains. *Culex fatigans* was scarcer than in previous years. *Culex orbostiensis, Culex sitiens, Culex australicus, Aedes procax,* and *Aedes vittiger* were taken on several occasions, but *Mansonia uniformis* was collected only once, in April. *Mansonia* spp. seem to have been particularly affected by the drought, probably because it is likely that they overwinter in the larval stage.

6. PUBLICATIONS

MARKS, E. N. 1967. Mosquitoes in Australia's arid zone. *Aust. nat. Hist.* **15** (10): 331-336.

MARKS, E. N. 1967. An atlas of common Queensland mosquitoes; *with* a guide to common Queensland biting midges by E. J. Reye. (Revised edition). 91 pp. Univ. Qd. Bkshp., St. Lucia, mimeo.

7. IDENTIFICATIONS

Valuable records and specimens were obtained from collections submitted for identification or checking. These included a new undescribed species of *Aedes* (*Macleaya*) from Western Australia and the first known male of *Aedes iwi* from Mitchell River, Queensland.

Queensland: Mitchell River, Shoalwater Bay (H. A. Standfast).

Northern Territory: Darwin, McArthur River (E. J. Reye).

Western Australia: A large collection from various localities in the south-west. (N. V. Dobrotworsky).

New South Wales: Mt. Keira (G. B. Monteith).

New Guinea: Minj (S. H. Christian).

By Authority: S. G. REID, Government Printer, Brisbane